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MEDICAL DEPARTMENT ORIENTATION

PART ONE

PREPARED BY

BUREAU OF MEDICINE AND SURGERY

FOR

PUBLICATION BY

BUREAU OF NAVAL PERSONNEL

February, 1949

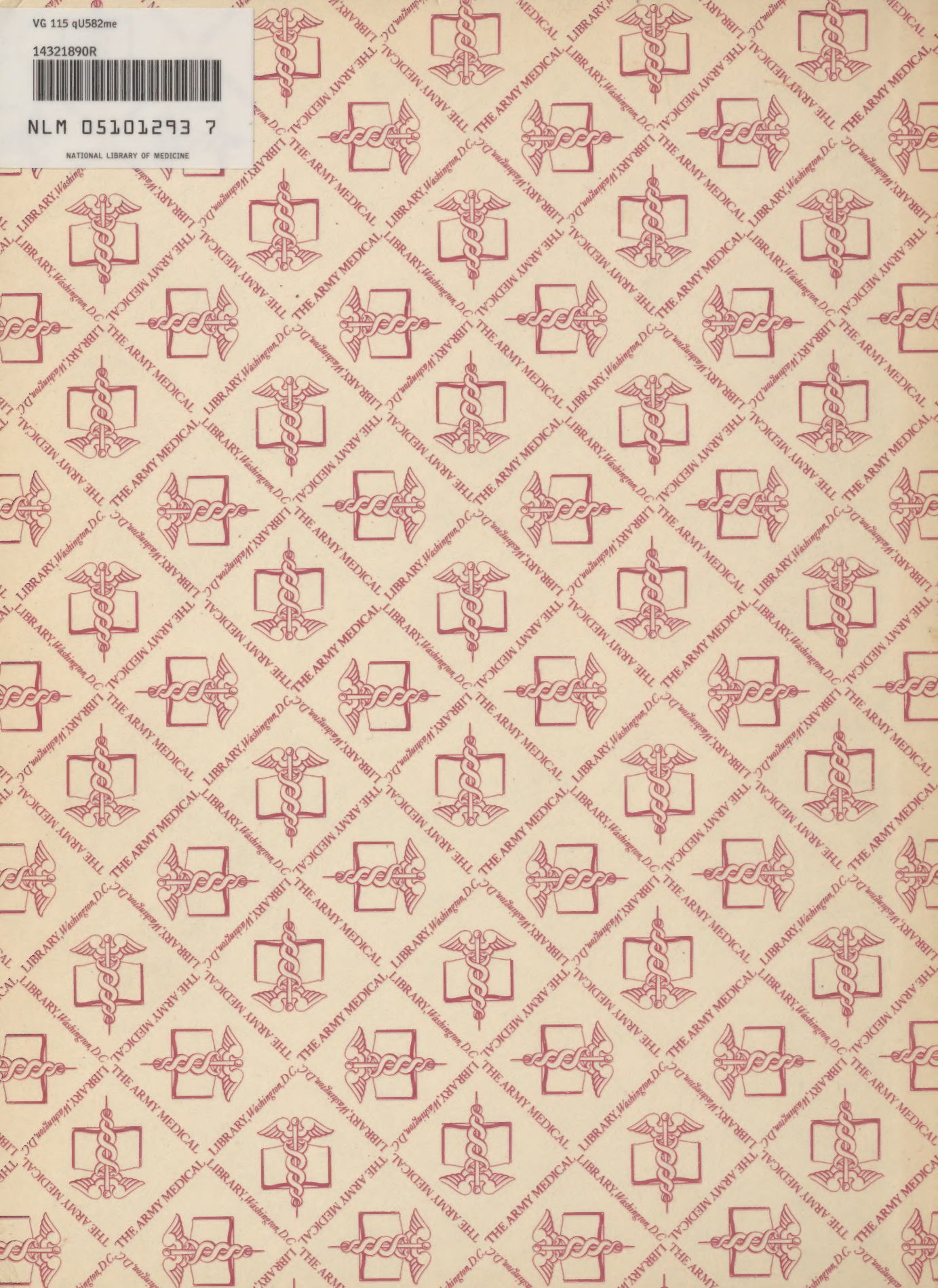
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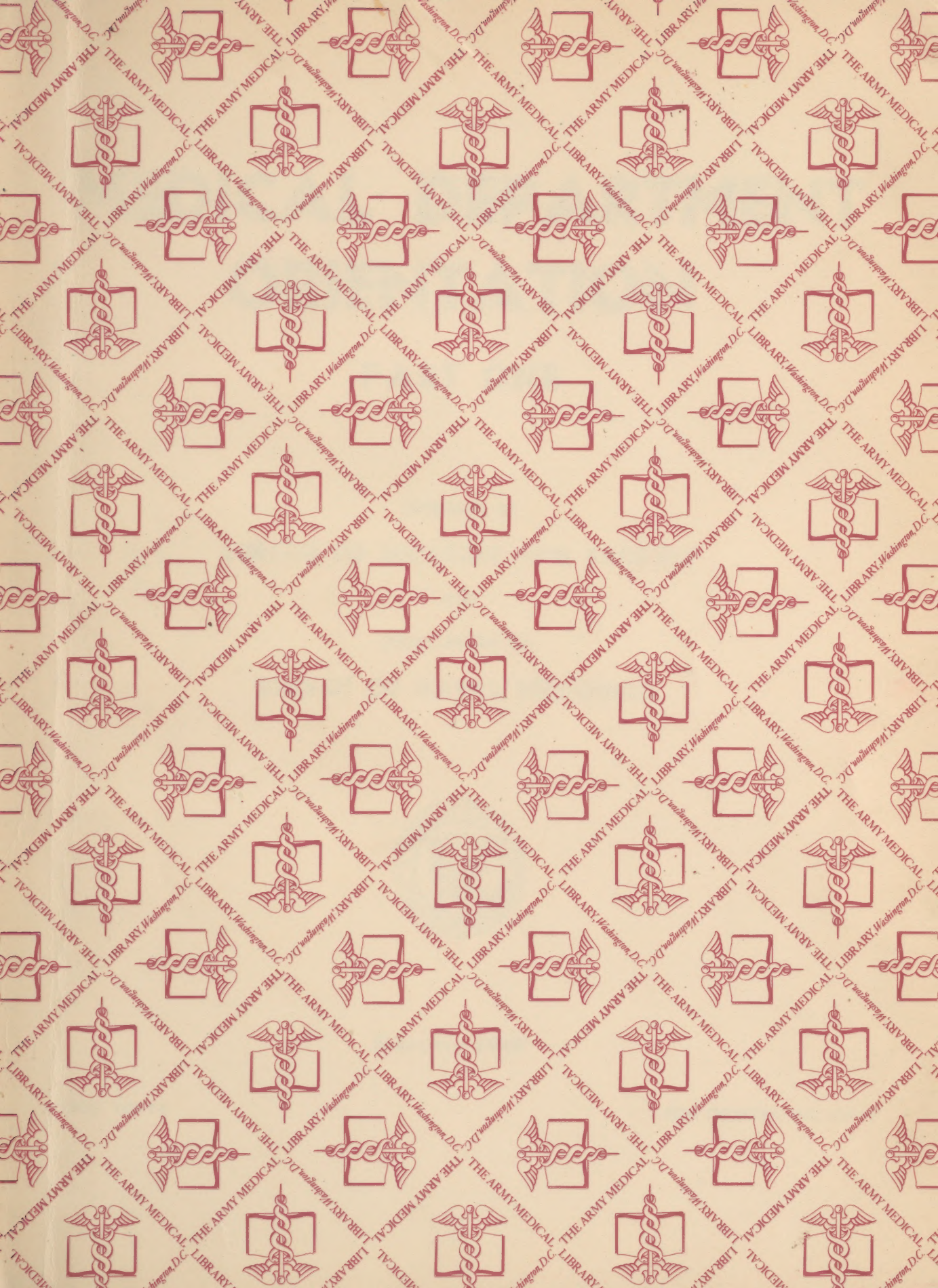
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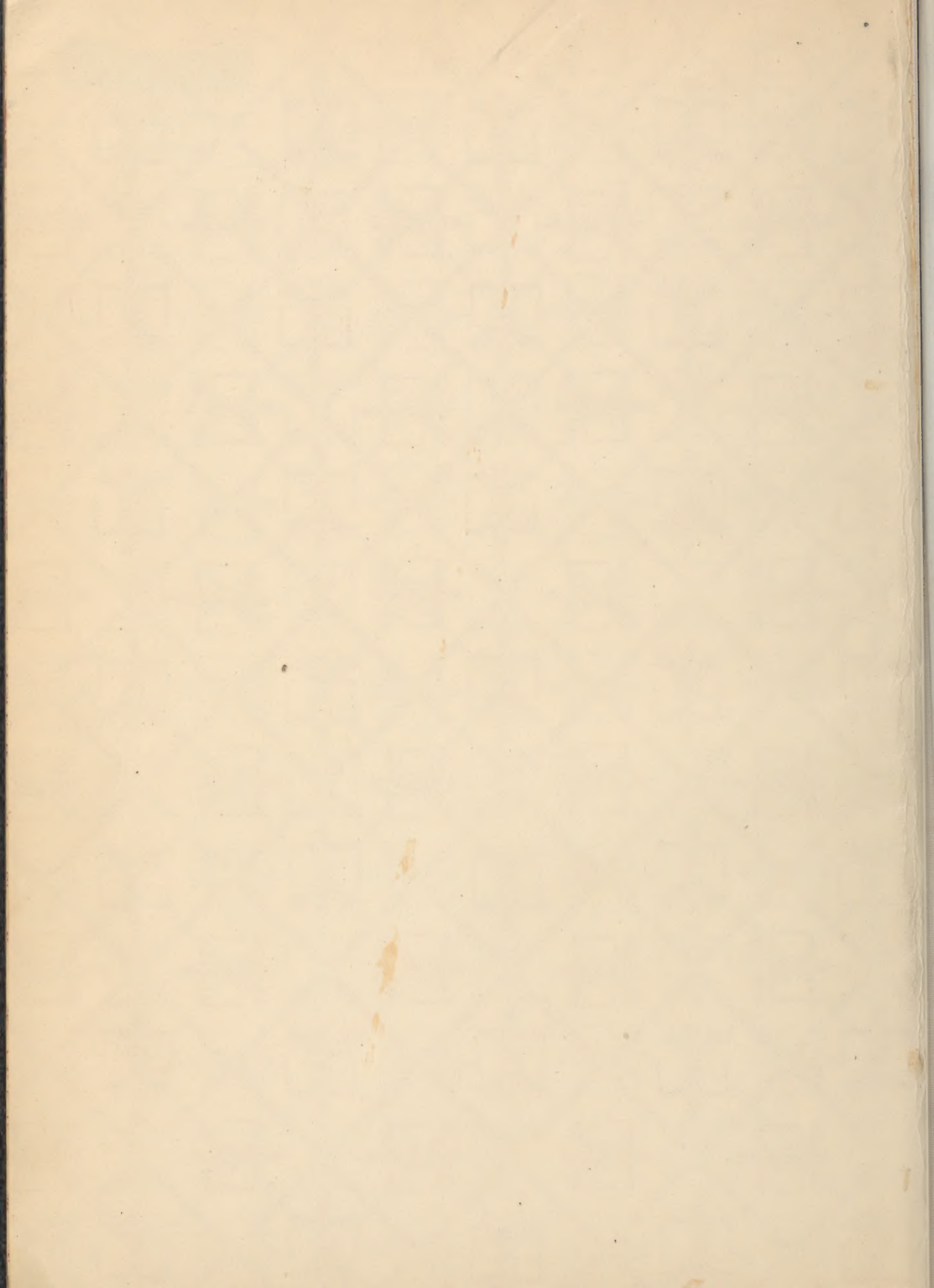


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CHAPTER 1

MEDICAL DEPARTMENT ORIENTATION

PREFACE

This course is designed to give officers of the Naval Medical Department advanced information of, and familiarity with, the Medical Department's procedures, responsibilities, and requirements, the duties to be performed under various circumstances, and the naval aspects of fields not usually encountered in civil life.

It will prepare personnel for naval service and assignment to duty so that their services and abilities can be properly utilized in time of emergency, and will encourage them to train themselves in the requirements of naval service and to maintain an active interest in the Naval Reserve.

The subject matter is presented in the same way as a college extension course, and it is intended that the schedule shall have flexibility so that a person may take any part and as much of it as is necessary to gain required credits. The material is designed to give understanding and instruction insofar as possible by correspondence and home study.

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CHAPTER 1

MEDICAL DEPARTMENT ORIENTATION

THE MEDICAL DEPARTMENT

DEFINITION

In World War II a globe-circling network of medical activities was required to provide medical care for a Navy that expanded to a strength of 4 million officers and enlisted personnel. Hundreds of shore-based facilities, ranging in size from small first-aid stations to mammoth hospitals with 15,000 beds, came into being. Afloat, many units supplied medical and dental care to forces that served above, beneath, and on the surface of the sea. More than 170,000 medical and dental officers and enlisted personnel were needed to staff this vast organization. These medical and dental activities, ashore and afloat, were directed by the Bureau of Medicine and Surgery. What these activities do, both in peace and in war, and how they and their personnel are managed and controlled are matters that will be examined more closely in this course.

Before proceeding further, however, it may be well to have a better understanding of the meaning of the term "Medical Department" as used in the following chapters. Clearly, in its strict official sense, the term is not synonymous with the Bureau of Medicine and Surgery, since it comprises many medical activities of the Naval Establishment not a part of that agency.

In its broadest sense the Medical Department may be defined as including all medical and dental personnel, the facilities, and the administrative structure necessary to provide efficient medical service for the Navy, including the Marine Corps. Professional direction of these activities, ashore and afloat, stems from the executive branch of the Medical Department, designated the Bureau of Medicine and Surgery, which is a part of the Navy Department. The Surgeon General is chief of the Bureau of Medicine and Surgery, and has broad functions and powers as head of the Medical Department.

Ashore, the Medical Department comprises activities such as naval hospitals, dispensaries, supply depots,

laboratories, medical and dental research activities, the National Naval Medical Center, medical and dental training centers, and dental clinics, all of which are a part of the Naval Shore Establishment. All of these activities are under the technical control of the Bureau; but some facilities, such as the dispensary of a naval shipyard or naval air station, are a part of a shore establishment under the management control of another Bureau.

Medical and dental activities of the operating forces, including those aboard ship, those of fleet shore activities, and the components of the front-line forces, are also a part of the Medical Department. All Medical Department activities exist for the purpose of lending logistic support to the operating forces.

MISSION OF THE MEDICAL DEPARTMENT

The mission of the Medical Department of the Navy is the prevention of disease and the care of the sick and injured of the Navy and Marine Corps, in peace and in war.

This includes the medical care of all personnel of the Navy and the Marine Corps, and their dependents, in all parts of the world; the emergency treatment of civilian workmen employed by the Navy; and, when necessary, the care of native populations. The Department's mission is accomplished largely in two ways—by safeguarding the health of naval personnel through the employment of modern methods of hygiene and sanitation, both ashore and afloat; and by adopting the latest techniques of medicine and dentistry and administration to improve physical efficiency and standards of work performance so that the greatest number of personnel will be ready for duty at all times.

A list of the duties and responsibilities of the Bureau of Medicine and Surgery, as set forth in *Navy Regulations*, follows:

1. Safeguarding the health of personnel in the naval

service; providing care for the sick and injured; providing medical and dental attendance to retired naval personnel and transferred members of the fleet and Fleet Marine Corps Reserve, and other pertinent related services.

2. The preparation of specifications for, and the procurement, inspection, receiving, storage, care, custody, and issue of all medical and dental materials used in the Naval Establishment.

3. Research in the sciences of medicine and dentistry, including preventive medical procedures, medicinal and dental substances, remedies, materials, devices; the physical and mental characteristics and the endurance capabilities of the human being; the physiological problems pertinent to the naval service.

4. Evaluation of the performance characteristics, from the physiological standpoint, of equipment designed for use in the naval service, and submission of recommendations thereon.

5. Providing medical and dental attendance, as authorized by law and by competent authority, to dependents of persons in the naval service, and to civilian employees who suffer injury or become sick while at work; conducting physical or medical examinations of civilian employees, as may be required by law; and providing, outside the continental limits of the United States, under circumstances where other facilities are not reasonably accessible and as prescribed by law, medical and dental attendance to civilian employees of the Federal Government, and employees of contractors with the Federal Government, and their dependents, respectively, and to such other persons as may be prescribed by the Secretary of the Navy.

6. In coordination with the Bureau of Ships, approving the design of hospital ships, insofar as their efficiency for the care of the sick and injured is concerned.

7. The determination, in collaboration with other bureaus concerned, of standards of environmental sanitation, industrial hygiene, and other measures for the prevention of illness or injury within the Naval Establishment.

HISTORICAL BACKGROUND

MEDICAL OFFICERS IN EARLY NAVY

Part of the Navy since 1775.—Members of the medical profession have always played an important role in the Navy. As early as 1775, before the Federal Government was organized, they were an integral part of the crews of the 13 original ships comprising the Navy authorized by the Continental Congress. They

have served with gallantry and distinction on every type of fighting ship from the *Alfred*—the sloop-of-war on which John Paul Jones hoisted the first American flag in 1775—to the mighty battleship *Missouri*. Both ashore and afloat, they have used their professional skill in an unceasing effort to find new and more powerful weapons to combat disease and to devise better techniques to heal the sick and wounded.

In the early days of the Navy, however, medical officers seem to have had little, if any, relationship to one another. They served as part of the organization of a ship, which for the most part acted independently as an armed force and by itself. Appointments were often made by the captain of the ship, without reference to any other authority. The number of medical officers allowed each ship and the pay they were to receive were fixed by the number of guns the ship carried. Vessels mounting 20 or more guns were to have a surgeon; those with fewer guns, a surgeon's mate whose rank was comparable to the present warrant officer.

Medical officers were assisted by "loblolly boys," the forerunners of present hospital corpsmen, who derived their name from a porridge served to sick seamen. In addition to nursing duties, one of their main tasks was to fill a washtub with sand to catch the blood during surgical operations so that the deck would not be stained.

Professional standards for early medical officers were not always of the highest. While the Continental Congress in 1777 had specified that medical officers should pass an examination to gain entrance into the Navy, it was not until 1824 that a serious attempt was made to conduct professional examinations for these officers.

Despite the hardships of a naval career, the Medical Department has attracted some outstanding men who doubtless entered the Navy because of the opportunity to travel and to gain wide surgical experience. Some of these early officers, because of their unique personal qualities, won themselves a lasting place in the annals of the Medical Corps. Among these were Edward Cutbush, the first important American writer on naval medicine, who organized the first naval hospital in 1804 at Syracuse, Sicily, during the operation against the Barbary States; Lewis Heermann, a German-born officer, who assisted Decatur in setting fire to the captured *Philadelphia* in Tripoli harbor, and who later set up one of the first naval hospitals in this country at New Orleans; William P. C. Barton, the first Surgeon General who, because of his ability as an organizer and administrator, merits the title of "the father of hospital administration;" and Elisha Kent Kane, a renowned

traveler and adventurer known to almost every American during the fifties through the popular accounts of his Arctic expedition.

Medical officers of this type have never confined their activities solely to the discharge of their professional duties. As champions of better treatment, both medical and nonmedical, for all members of the ship's crew, they have brought to the Navy an ever-increasing consideration for the welfare of enlisted man. They fought for better sanitary facilities, proper clothing, a more balanced diet, personal cleanliness (including a soap issue to sailors), isolation of contagious diseases, and abolition of flogging. It was their bitter opposition to the venereal fee (a fee paid to the ship's surgeon for treating a sailor, perpetuated in the Navy until about 1840) that finally led to its abolishment.

Officers of the highest standing, like Cutbush, Barton, and Heermann, often found opportunity to visit the leading medical centers of Europe. It was the forward-looking vision and alertness of these men that led to the early adoption by the American Navy of many important advances of British naval medicine. These achievements of the late eighteenth century were pioneered by outstanding British scientists such as Thomas Trotter, Gilbert Blane, and James Lind, whose epoch-making treatises on scurvy, naval hygiene, and tropical medicine had a profound influence on the medical thought of two continents.

MEDICAL FACILITIES ASHORE AND AFLOAT

Early sick bays.—Like the improvement of the medical officer's status within the Medical Department, achievement of better quarters for care of the sick and injured on board ships and on land was a slow process, attained only after repeated agitation by medical officers and other officials.

While *Navy Regulations*, as early as 1798, called for "a convenient place to be set apart for sick and hurt men" aboard naval vessels, the ill-ventilated, poorly lit, and inadequately equipped spaces reserved for the care of the sick on early ships was a far cry from the completely appointed sick bays of today.

At the approach of a strange sail the surgeon, mates, and loblolly boys took up their stations in the cockpit of the ships—the small space below the waterline out of range of enemy fire usually reserved for the wounded. There, amid the confusion of battle, the medical officer and his assistants had to perform their task with the limited resources at hand. The lifesaving drugs and effective techniques of modern medicine were

unknown. Surgeons lacked adequate anesthetics and antiseptics. Great faith was placed in vinegar as a germ-killer; rum and laudanum were the most frequently used agents for deadening pain. During an operation, patients were often strapped to the table, like an animal in a laboratory. On small vessels without the minimum accommodations of the cockpit, surgeons were advised to manage as well as circumstances would permit.

First naval hospital.—Nor were the makeshift methods of hospitalization on land, which consisted of leaving the sick or wounded ashore in improvised buildings in or near navy yards, any more suited to their purpose than the poorly situated sick bays aboard ship. One early Secretary of the Navy, in a statement urging construction of naval hospitals, disclosed that three-fifths of the patients at such temporary sick quarters deserted as soon as they got well.

In 1811 funds were first made available for hospital construction. Congress in that year directed that the funds derived from 20-cent monthly deduction from the pay of naval personnel for the care of the sick, which had accumulated in the Navy Hospital Fund since its establishment in 1799, could be used to procure hospital sites and to erect appropriate buildings.

Despite the availability of funds and the fervent pleas of medical officers, the political atmosphere of the "Era of Good Feeling" was unfavorable to such a project, and it was not until 1821 that the first hospital site was procured in Washington, D. C. This was followed by the purchase of sites in Boston, Brooklyn, Philadelphia, and Norfolk (Portsmouth). Finally, in 1830, 30-odd patients and a 5-man medical staff moved into the first naval hospital at Norfolk. Following the opening of that institution, naval hospitals were erected at irregular intervals on the other sites.

SUBSEQUENT DEVELOPMENT

Organization of the Medical Department.—The story of the Medical Department begins in 1798 when the Navy Department and the first ships of the American Navy came into being almost simultaneously. About a year before, Congress, because of unfriendly relations with France, had rushed to completion the construction of three of the six frigates authorized in 1794. To provide this new navy with specialized supervision, it removed control from the War Department, which had been responsible for naval affairs since 1789, and established a separate Navy Department on April 30, 1798.

Shortly afterward, one of the Navy's new fighting ships was put into commission. Among the crew of the frigate *Constellation* were Surgeon George Balfour, the first regular commissioned member of the Medical Corps, and John Wall, the first loblolly boy on record. In 1799 the medical staff of this ship received its first baptism of fire when the *Constellation* soundly trounced the French frigate *L'Insurgente* in a West Indies battle off the Island of Nevis.

During this early period the Medical Department was not organized in any sense; it consisted merely of its individual members. By 1800 the Navy had only 35 surgeons and 28 surgeon's mates. In 1828 Congress first recognized the existence of a Medical Department, but took no definite steps to create such an agency within the Navy Department.

Establishment of the Bureau of Medicine and Surgery.—A separate naval medical organization was not established until 1842, when Congress reorganized the Navy Department and provided for five separate bureaus, one of which was the Bureau of Medicine and Surgery. Surgeon W. P. C. Barton, who 27 years before had published a *Scheme for Systematizing the Medical Department of the Navy*, was chosen as the first Surgeon General.

The formation of the Bureau gave considerable impetus to the development of the Corps and to the improvement of medical facilities, both ashore and afloat. The professional status of medical officers was appreciably improved. In 1842 the maximum for a surgeon's annual pay was set at \$2700 per annum, a considerable increase over the \$600 figure at the turn of the century.

Expansion During Civil War.—Between 1842 and 1860 little progress in the organization of the Medical Department was made. In the fifties the annual appropriation for the department was only \$50,000. There were in service, at that time, 69 surgeons and 80 passed assistant and assistant surgeons.

Some forward-looking steps were taken, however. In 1850, largely through the efforts of the Medical Department, flogging was abolished. In 1853 the Naval Hospital at Annapolis was built, and the Naval Laboratory was established on the grounds of the Brooklyn Naval Hospital. Out of this laboratory was to grow the Naval Medical School (1902) and the Naval Medical Supply Depot (1906).

In the sixties the Medical Department expanded with the growth of the Navy. During this decade the hospital at Washington, D. C., was built, the *Annual Reports of the Surgeon General* (later to be of much value to public health authorities and other officials), were first pub-

lished, and the Navy's first regular hospital ship, the *Red Rover*, was commissioned.

Representative of the traditionally devoted and courageous naval surgeon was William Longshaw of the *Lehigh*. On 16 November 1863, in the hurricane of shell and small-arms fire before Sullivan's Island, Assistant Surgeon Longshaw carried lines in a small boat from the *Lehigh* to the grounded *Nahant* until one hawser was finally secured and the ship towed to deep water. Constantly eager to share the dangers of battle with the men on the firing line, Longshaw was killed on 15 June 1865, in the act of binding up the wounds of Marine riflemen under the walls of Fort Fisher.

In the midst of the war the efforts of the Medical Corps to put an end to grog in the United States Navy were finally rewarded. The last ration was served on 31 August 1862.

POST CIVIL WAR PERIOD (1865-1917)

Changes in ranks and ratings.—Although after the Civil War the Medical Department generally deteriorated along with the rest of the Navy, some advances were made, both in organization and facilities. In 1871 the medical officers were no longer listed simply as "surgeons," but as members of a staff corps of the Navy. They were given grades of medical director, medical inspector, surgeon, passed assistant surgeon, and assistant surgeon, with relative ranks, respectively, to captain, commander, lieutenant commander, lieutenant, and master. Assistant surgeons, on their first cruise had the relative rank of ensign. Three more hospitals were constructed—at San Francisco (Mare Island, 1870), Yokohama (1872), and Pensacola (1875).

Improvements in medical facilities.—In the eighties and the nineties, the use of steel in the construction of the Great White Fleet made possible better ventilation, light, heating, larger and better protected sick bay quarters, and living spaces. Medical facilities aboard ship were much expanded and improved.

In 1883 the Museum of Naval Hygiene was founded in Washington, D. C. In 1886 the first book of *Instruction for Medical Officers*, a compilation of *Navy Regulations* affecting the Medical Department, was published. Editions after the second edition in 1906 bear the title, *Manual of the Medical Department, United States Navy*.

In 1893 the Surgeon General, J. R. Tryon, restored the use of the Naval Laboratory at Brooklyn as a place for postgraduate instruction in naval medicine. In 1895,

when the new Naval Observatory was erected, he obtained the old site as a place for a school. He moved the Museum of Naval Hygiene and the library of the Surgeon General into this old observatory building and ordered the new classes to be sent there for instruction. It was not, however, until 1902, during the regime of Surgeon General P. M. Rixey, that this old building became the Naval Medical School, with a formal title and faculty.

In 1898 the Hospital Corps, composed of the enlisted men of the Medical Department, was established.

In 1899 the rank of rear admiral was given to the officer holding the office of Surgeon General of the Navy, and the Medical Department thus was given added prestige.

Under the new Surgeon General, P. M. Rixey, the Medical Department expanded rapidly. With the backing of his good friend, President Theodore Roosevelt, Rixey (1902-1910) established the Naval Medical School in 1902, renovated hospitals, saw his Corps doubled by legislation, and brought specialization and postgraduate training to the Department. The training school for the Hospital Corps was founded in 1903. The Nurse Corps was established in 1908. Naval hospitals were constructed at Puget Sound and at Canacao, P. I., in 1903; at Las Animas (for cases of tuberculosis) in 1906; at Great Lakes in 1907, and on Guam in 1910. Publication of the *Naval Medical Bulletin* began in 1907. The old hospital ship *Relief* was refitted in 1908 and sailed as the first of our hospital ships commanded by a medical officer. In 1909 a department of hygiene and physiology was established at the United States Naval Academy. Rixey planned, but never was able to establish, a Dental Corps.

Under Rixey and Roosevelt annual physical examinations for officers, which included a specified amount of exercise, were inaugurated. Such subterfuges as riding a tramway up "The Peak" in Hong Kong and then coasting down the requisite number of miles on a bicycle, could not nullify the effect of this weeding-out process, which aimed at leaving only physically fit officers in the Navy.

Medical program in island possessions.—When the United States assumed control of some of the island possessions of Spain, it also assumed the responsibility for their welfare and later, in several cases, responsibility for the welfare of their neighbors. In Puerto Rico, the Virgin Islands, Guam, Cuba, and Haiti the Medical Department set up medical facilities and established programs for the education of the native peoples in hygiene and sanitation.

In 1915, for example, when the United States naval forces occupied the island of Haiti, the officers of the Medical Department immediately instituted measures to improve the existing unsavory conditions. They organized a public health system; developed two hospitals (at Port au Prince and Haitien); started a National School of Medicine and a School of Nursing; established clinical service; and instituted a program for the control of malaria, syphilis, and yaws.

Such a record typifies the peacetime work in which the Navy Medical Department has been engaged for the last 50 years, from the first days of our occupation in the Philippines, through the Nicaraguan campaigns of the 1920's, to our present comprehensive survey of the sanitation and health conditions of the people of the Pacific islands under our "trust."

After the tremendous push given the Medical Department by Rixey and Roosevelt, the Department kept up a steady progress through the years. In 1911 antityphoid vaccination was made mandatory, and the systematic teaching of first aid was instituted. In the following year the Dental Corps was established under the new Surgeon General, Charles Francis Stokes.

In the same year an attempt was made to provide a peacetime reserve organization in the form of a Navy Medical Reserve Corps. In 1913 the Navy Dental Reserve Corps came into existence.

WORLD WAR I

Service with Marine Corps.—During World War I the Medical Corps rendered outstanding service to the men of the Fourth Marine Brigade, part of our Second Division, in France. At Belleau Wood, Chateau-Thierry, and St. Mihiel, wherever the Marines added glory to their battle standard, the Personnel of the Medical Department shared their dangers and, in the tradition of Longshaw and Parsons, brought succor to the wounded.

In preparation for this campaign, the doctors and corpsmen trained with the ground troops from the first days at Quantico. Out of these weeks of training and organization of medical facilities was developed the first practical school of field medicine in the United States, which foreshadowed the later development of amphibious medicine in World War II.

At sea, the Medical Department was studying the lessons of Jutland and other naval actions of the war. Naval medical tactics were more fully developed from these lessons. The placing of aid stations aboard ship, the type of injury to be expected, and the number of casualties aboard different types of ships were all care-

fully calculated, the data assembled, and plans laid for future emergencies.

After the war the Department experimented with new types of small hospital units, like the "hutments" at Pearl Harbor and Canacao, as they sought to find practical emergency units. New types of hospital ships, complete with air conditioning, modern surgery units, etc., were planned. Aviation and submarine medicine emerged from the war as important specialties of naval medicine.

WORLD WAR II

Preparations for conflicts.—Long before Pearl Harbor it was apparent that the Medical Department would have to revise its previous plans, based upon the need of supporting a one-ocean Navy, to meet the threat of a new type of warfare—global and total. Personnel, materials, and facilities would have to be expanded and re-evaluated in the light of possible new demands; planning and thinking would have to be done in terms of entirely new concepts.

After considerable study and investigation, a new type of naval hospital, capable of providing medical support for the highly mobile forces of modern warfare, was developed. This was the mobile hospital, a prefabricated iron building that could be easily assembled and transported to advance positions as conditions required. In September 1940 the first trial mobile hospital was shipped to Guantanamo Bay, Cuba. Eventually similar facilities, ranging in size from a 10-bed dispensary to a 3,000-bed base hospital, were established in many other parts of the world.

Personnel had to be trained in the latest methods of clinical and battle treatment and in new techniques of surgery. Special attention was given to preventive and tropical medicine, including study and research in the field of tropical and exotic diseases, many of which were of slight concern to medical men in private practice before the war. Training activities and field work were undertaken to prepare for the control of malaria and epidemics; sanitation methods were improved; and venereal disease control measures were instituted. The school for training flight surgeons, set up at Pensacola in 1939, had already provided the Naval Air Corps with a substantial number of flight surgeons able to cope with the specialized problems of aviation medicine.

Research had to be extended and intensified so that our men would be able to perform their duties in a mechanized war. Special attention was given to the

fields of submarine and aviation medicine. In submarine medicine, studies were made of diet, protective clothing, air conditioning, the use of sun lamps, and the use of neuropsychiatry—especially in selection of personnel. Aviation medicine made noteworthy progress in developing oxygen apparatus and protective clothing; in combating decompression sickness, acceleration stresses, air sickness, and fatigue; and in the testing of the aptitude of personnel for flight training, and the careful application of psychiatry to aeronautic personnel.

Wartime record.—When the Japanese attacked Pearl Harbor, the Medical Department was ready to meet its wartime responsibilities. The recoveries made by our wounded, referred to in medical circles as the "miracle of Pearl Harbor," were the direct result of the months of careful planning and intensive preparation. Performances of Mobile Hospital No. 2 and the hospital ship *USS Solace* were so outstanding that their personnel were cited *en masse* by the Commander in Chief, Pacific Fleet. As the war progressed, the Medical Department was brought into further contact with the enemy, and it continued to learn important lessons concerning the care and evacuation of casualties, the prevention of disease, and improved methods of treatment of the sick and injured.

In World War II, the Medical Department achieved a remarkable record in saving human lives. Despite the fact that bombs and high explosives produced wounds of a far more serious nature than in early warfare, 97 of every 100 wounded men managed to survive. This mortality rate of less than 3 percent, compared with 11.1 percent in World War I, was due to a number of factors.

Casualty evacuation from beachheads back to advanced bases, a joint operation with line personnel of ships and aircraft which was rapidly and efficiently completed, was a highly important contributing factor to this high rate of survival. In many cases transport by water or air was so rapid that wounded men were being operated on at a rear base hospital within two hours after being wounded. Hospital ships, for the first time, incorporated the most advanced improvements of permanent hospitals ashore, and were completely air-conditioned. Air evacuation, pioneered on a large scale by Navy medical officers and hospital corpsmen attached to the Marine Corps in the early campaigns in the South Pacific, likewise ranks high among the factors resulting in such low mortality.

The use of sulfonamides, penicillin, and blood plasma, as well as the system of flying fresh whole blood to combat zones, was also important. Similarly, the pro-

gram for psychological and physical rehabilitation, a part of the convalescent treatment schedule, aided the return of wounded men to duty or to civilian life.

Heroic role of Hospital Corps.—Without detracting from the accomplishments of the doctors, nurses, and specialists, it can be said that the hospital corpsmen, who braved death to aid the wounded where they fell, deserve the highest credit for their contribution to the achievement of the Medical Department's mission. In many cases their casualty rate was higher than that of the troops they were supporting. The Hospital Corps won their deserved reward in the form of a Presidential Citation.

Effectiveness of naval medicine.—In previous conflicts in which this nation engaged, deaths of naval personnel from disease far outweighed those from enemy action. World War II reversed this ratio. The early and successful use of vaccines, antitoxin, and other preventive measures accounts for the unusually low disease rate among servicemen and civilian populations. A high standard of sanitation was maintained despite extensive operations in the Pacific area where dank jungles were filled with almost every disease-bearing insect known to man, where the most common sanitary precautions were not observed by natives, and where the usual facilities for garbage and sewage disposal were unavailable. Special teams of doctors and specialists were organized to prevent, or control, outbreaks of epidemics of disease and attacks of malaria. New methods of combating insect pests were introduced, including aerial spraying of the new, powerful insecticide, DDT.

The effectiveness of preventive medicine is dramatically shown by the low mortality rate from disease of American combat troops on Guadalcanal, where jungles were infested with malaria-carrying mosquitoes. Of an estimated force of 24,000 Japanese on that island, over half perished from disease and starvation. But Americans listed as dead (from all causes) or missing on Guadalcanal totaled only 1,500.

In addition to its highly important task of caring for the wounded, the Medical Department, during World War II, handled an enormous case load of ordinary sickness and injuries. Some 90,000 wounded were treated, but over fifty times that number of cases of disease and noncombat injury were handled. Many new and improved methods of treatment were developed. These included more effective treatment of burns and new procedures for healing fractures. At Pearl Harbor, for example, the Navy learned the devastating effect of bombs and high explosives which resulted in an unpre-

cedented number of flash burns. Protective clothing was devised as a consequence, and intensive research into better methods for treatment of burns was instituted.

Expansion in personnel.—During World War II, the Medical Department expanded its personnel to a strength of 170,000—a total force larger than the entire regular Navy before the war. Of this number about 21,000 were medical and dental officers and 11,000 were nurses. When victory came, these skilled specialists could proudly proclaim "mission accomplished." Thanks to their untiring efforts, the Navy man had a better chance of living through the most destructive of all conflicts in the nation's history. Now, in peacetime, many of the wartime achievements of the Medical Corps are being put to wider use in civilian life. These new discoveries and improved techniques, which contributed so much to victory, are benefitting all mankind.

EARLY HISTORY OF NAVAL DENTISTRY

In the early days of dentistry in the Navy, the means of providing dental attention to naval personnel were highly unsatisfactory. Most ships, and many shore facilities, lacked professional dental service of any kind, and where such service was available, practitioners were unable to cope with the tremendous demand. With the exception of midshipmen at the Naval Academy, both officers and enlisted men had to pay for their own dental care.

Before 1900 the only dental attention afforded at sea consisted of emergency aid rendered by medical officers. A seaman with a toothache would get only such attention as was necessary for immediate relief of pain. Routine dental care was obtained from a civilian practitioner ashore who often provided treatment that was worse than none at all. The standards of the dental profession in many countries during the nineteenth century were such that charlatans, masquerading as dentists, continued to dispense leeches or mysterious potions which struck at the symptoms and not at the causes of the discomfort.

The first naval dental care at Government expense was supplied at the Naval Academy when, in 1883, Congress authorized the employment of a civilian dentist to serve the needs of midshipmen. The first incumbent, Dr. H. Walton, held this position until 1899, when he was succeeded by Dr. Richard Grady, who became one of the first group of assistant dental surgeons when the Dental Corps was established in 1912.

The detailing of hospital stewards (the equivalent of our present chief petty officers) who had had dental training to a few ships and shore stations marked a turning point in the history of naval dentistry. It was the Navy's first attempt to provide enlisted men, as well as officers, with free dental care, both at sea and ashore. In 1903 the first hospital stewards were assigned to the training station at Newport in the receiving ship *Columbia* and to the naval station at Guam. Subsequently, others were detailed to other naval facilities. This type of service, however, proved unsatisfactory. Owing to the great demand for dental care, especially at outlying stations or on ships at sea, hospital stewards, despite their inadequate training in dentistry, often performed work beyond their professional competence. Furthermore, few of the dentists who enlisted as hospital stewards remained beyond their first enlistment because of the meager pay and lack of the privileges enjoyed by commissioned officers.

It may be well to note that three hospital stewards, Harry Edward Harvey, Clarence A. Chandler, and William Fletcher Murdy, studied dentistry while on a tour of duty in Washington, D. C.; and on completion of their studies, they served as officers in the Navy Dental Corps which was established in 1912.

In his annual report of 1909, which contained his usual request for legislation to hire dentists in the Navy, Surgeon General R. M. Rixey pointed out that "it was never contemplated that they (stewards) should do complicated and difficult work which was not absolutely essential to the patient's temporary well-being, particularly as the Bureau had no assurance or evidence of their ability to perform work of this character." Shortly afterwards, an official directive limited hospital stewards to such semiprofessional work as they were qualified to perform, and required them to render service during working hours without charge.

A proposal calling for employment of contract dentists, especially at distant naval facilities—many of which were without even the meager care provided by hospital stewards—was first advanced by the Navy in 1904, shortly after the Army had been granted such approval. But it failed to win Congressional support. In some instances, however, contractual arrangements were worked out with dentists to furnish service to shore stations and on board ships.

On the first round-the-world cruise of the fleet in 1908, when this country displayed to other nations the prowess of its budding navy, dentists were a highly essential part of naval personnel. In 1910 a dentist from Cavite, P.I., was asked to accompany a squadron

of the Asiatic Fleet on its summer cruise. He was granted officer privileges, as well as a convenient working place on the flagship's gun deck, where he acquitted himself nobly by treating several hundred cases and filling over 1,000 teeth.

Like the service supplied by hospital stewards, this contractual type of dental treatment also proved unsatisfactory. Dentists, with an eye to pecuniary gain, did more prosthetic work than treatment of a preventive nature. The small number of dentists performing such service were only "a drop in the sea of need," and when a ship left port many of the crew remained untreated.

Furthermore, contagious diseases aboard ship or a local quarantine often prevented a civilian dentist from visiting a ship or naval station. During a yellow fever quarantine in the Isthmus of Panama, according to a report from Surgeon W. H. Bell in 1905, American dentists refused to treat naval personnel stationed in a nearby camp. An attempt to secure the services of a native dentist of questionable ability also proved fruitless. As a result, most of the men were detached without receiving any but palliative treatment and were transferred to Santo Domingo where "their chance for needed attention was, if possible, worse."

Finally, as the demands for official approval to hire dentists in the Navy became more insistent with each increase in personnel, Congress, on August 22, 1912, created the Navy Dental Corps. This date has a two-fold significance. It marked the end of the long, persevering struggle by such men as Presley M. Rixey, able, far-seeing Surgeon General during President Theodore Roosevelt's administration, who never gave up the struggle to have dentists recognized as a vital part of the Navy Medical Department. It also marked the beginning of another equally strenuous effort during the following years for removal of legal limitations imposed on the professional activities and status of naval dental officers.

The creation of the Navy Dental Corps only laid the cornerstone for a dental structure that was to take years to develop and complete. Only 30 officers were provided for in the Dental Corps under the Act of 1912. One year later the 15 dentists appointed up to that time and assigned to the largest stations where shore dental equipment was available were expected to care for the dental needs of the entire United States Navy. The type of service offered was in sharp contrast to the thorough dental attention supplied every seaman in the fleet today.

On the eve of World War I dental care was being

provided to only a very small part of the Navy. In 1915 the Surgeon General reported that most of the dental work had to be done ashore, since only 13 dentists were at sea; and even at shore stations the huge demand far outdistanced the ability of the small number of dentists to supply the needed attention. To assure more adequate dental service, Congress established in 1916 the ratio of one dentist to each 1,000 authorized enlisted men of the Navy and Marine Corps as the optimum in figuring the strength of the Corps. Dental service ashore and afloat during the first World War was inadequate. The 500 dentists, then in the service, to a total personnel in the Navy and Marine Corps of 600,000, reached the high ratio of 1200 persons to one dentist.

Following World War I, the need for additional dentists was temporarily met, in part, by placing Reserve officers on active duty. However, personnel shortages became so acute that some stations had to resort to a system of a rotation of duty for these officers. As the needs for dental care at Marine Corps bases, naval air stations, and other facilities continued to rise, Congress took steps in 1935 to increase the number of dental personnel by providing for the appointment of one officer of the Dental Corps for each 500 persons in the Navy. It was this more adequate ratio that permitted

the rendering of complete dental service to naval personnel.

The rudimentary treatment furnished by 500 dentists to a Navy of 600,000 during World War I was a far cry from the inclusive service rendered by 7,000 officers of the Dental Corps and 11,000 skilled dental technicians to 3,500,000 men and women during World War II. In World War I only 22 of the 43 transports carrying men to the war zone had commissioned dental officers aboard. In World War II all ships larger than a destroyer were equipped to handle every type of dental work, and smaller vessels were never far from their mother ships where dental attention could be had. Ashore, most stations were prepared to do intricate dental work, both operative and prosthetic, with the most modern and scientific equipment.

The Navy Dental Corps has maintained the highest standards of dental service for the widely dispersed facilities, required to meet the Navy's global commitments. This advancement, both in terms of improved standards of treatment and equalization of status for officers of the Dental Corps, since the creation of the Corps in 1912, may be largely attributed to the untiring efforts of professional men to have a dental service recognized as an essential part of the Navy's program to maintain the well-being of all hands.

CHAPTER 2

PERSONNEL OF THE MEDICAL DEPARTMENT

Members of the Medical Department have earned for themselves an enviable place among naval personnel. Their unswerving devotion to duty, their professional skill and versatility are distinguishing features of the high standards of service maintained by the five specialized Corps comprising the Medical Department: the Medical, Dental, Medical Service, Hospital, and Nurse Corps. From these Corps are drawn the highly trained specialists in medicine and allied sciences who are responsible for successfully accomplishing the over-all mission of the Medical Department. They operate hospitals, dispensaries, clinics, and laboratories ashore, provide personnel for the Bureau of Medicine and Surgery, staff medical facilities afloat, and train the thousands of technicians needed to maintain naval medical services.

The Medical Department staff is drawn from both officer and enlisted personnel of the Navy and from graduates of civilian professional schools. The Medical and Dental Corps are composed of medical and dental officers, who are appointed from civil life by the President, by and with the advice and consent of the Senate, after passing such professional examinations as are prescribed by law or by the Secretary of the Navy. Members of the Medical Service Corps are selected from commissioned warrant and warrant officers of the Hospital Corps and from qualified civilians. Commissioned warrant and warrant officers and enlisted personnel comprise the Hospital Corps. The Nurse Corps is composed of female nurses appointed from civil life. All Nurse Corps appointments, except that of superintendent which is approved by the Secretary of the Navy, are made by the Surgeon General, with the approval of the Secretary of the Navy.

The Medical Department maintains a number of schools for the professional instruction of its personnel, and also sponsors an officer-training program in civil-

ian colleges and hospitals. All officers, depending upon their qualifications, are eligible for postgraduate or specialized training given at the National Naval Medical Center, Bethesda, Md., and other naval training centers, and at leading universities. Officers of the various corps, except those of the Hospital Corps and certain members of the Medical Service Corps, must be graduates of civilian professional schools. On completion of "boot" training, selected enlisted personnel of the Medical Department are admitted to Hospital Corps Schools and Dental Technician Schools for further training in the basic medical and dental procedures.

In time of war, the Medical Department draws most of its officer and enlisted personnel from the ranks of civilians, many of whom are members of the Naval Reserve. In conjunction with the active and retired personnel of the regular Navy, the Reserves, also, are on the staff of naval medical activities. At the peak of World War II, most of the 36,000 officers and 132,500 enlisted personnel of the Medical Department were members of the Naval Reserve. In any future emergency it is expected that much of the Medical Department's officer and enlisted personnel will be supplied by the two major components of the Naval Reserve: the Organized Reserve which, as now planned, will attain a strength of about 24,350 naval officers and 199,000 enlisted personnel who will receive regular pay on the basis of their Navy rating; and the Volunteer Reserve, of about one million members, whose training will be voluntary and without pay.

The Organized Reserve—the active branch of the Naval Reserve—consists of officers and enlisted personnel who either attend regular drills and classes, and who once a year perform a 14-day period of training aboard Navy ships, at Navy shore bases, or at other naval facilities, or fulfill other requirements. Officers of the Organized Reserve are qualified for unlimited gen-

eral service, but the Chief of Naval Personnel may assign certain officers with special or limited general service classifications. Each Battalion usually has one billet for a medical officer. A Reserve officer who has reached the age of 60 and has at least 20 years of satisfactory service may retire at the rate of 2½ percent of his base pay for each year of active service plus ½ of 1 percent for each year of inactive service.

The Volunteer Reserve, which consists of officer and enlisted personnel who are not members of the Organized Reserve and not required to attend regular meetings for training purposes, provides a reserve force from which will be drawn personnel for the five staff corps of the Medical Department.

The mission of the Volunteer Reserve Component of the Medical and Dental Corps is to provide an adequate trained force of Reserve Medical and Dental Officers and enlisted personnel of allied ratings who will be available for mobilization in the event of an emergency.

Where feasible, the Volunteer Reserve Component of the Medical Department will be organized into *volunteer medical and dental units*. These units are to be considered as personnel pools of the component forces of the Medical and Dental Reserve, from which, in time of mobilization, personnel may be ordered to active duty individually or in groups to meet the needs of the Naval Establishment.

It is also contemplated that a volunteer medical and dental unit may, in time of war or national emergency, be ordered to active duty intact for assignment to Naval Hospitals, Naval Dental Clinics, Training Centers, or other large Naval Establishments.

Volunteer medical and dental units are established geographically to accommodate the largest number of personnel.

These units are now organized as follows:

MEDICAL

Maximum allowance per unit

241 Units	75 Medical Officers.
18,000 Medical Officers	15 Medical Service Corps Officers or Warrant Officers.
3,600 Medical Service Corps Officers or Warrant Officers.....	50 Nurses.
12,000 Nurses	250 Hospital Corpsmen.
66,000 Enlisted Men	390 Total.

DENTAL

Maximum allowance per unit

100 Units	25 Dental Officers.
2,500 Dental Officers	1 Medical Service Corps Officer or Warrant.
100 Medical Service Corps Officers or Warrant	44 Dental Enlisted Personnel.
4,400 Dental Enlisted Personnel	70 Total.

These figures may be subject to change to meet the needs of the service, but the ratios will remain much the same.

Each volunteer medical unit will be under the command of the senior Reserve medical officer (inactive) in each unit. Likewise, the senior Reserve dental officer (inactive) will be in command of each volunteer dental unit. The medical and dental officers commanding these Units will have cognizance of, and exercise supervision over, the functions of their respective units and, under the direction of the Commandant, will assist in the procurement of personnel and the administration of the Medical and Dental Reserve Program in the units.

The enlisted personnel component of the volunteer medical and dental units will be employed, in time of war or national emergency, as numerical reliefs for Regular Navy personnel ashore, to bring medical and dental shore activity complements to 100 percent and for such other purpose as the immediate needs of the Medical and Dental Corps require.

The primary purpose of these divisions is for peacetime training of medical officers, dental officers, and enlisted members of the Medical Department of all ranks and ratings, in professional, technical, and administrative duties.

THE MEDICAL CORPS

The oak leaf and acorn insignia of the Medical Corps represents the achievement of men who have cared for the health of the Navy for more than 150 years. In World War II, its members successfully completed their biggest assignment. Some 14,000 medical officers, of whom about 12,000 were Naval Reserve officers, cared for 90,000 wounded and almost 5 million cases of disease and noncombat injury. Despite the magnitude of this task, the Corps maintained the highest standards of health and sanitation in the Navy's history.

Much of the credit for this distinguished wartime record must go to the Navy's foresight in developing, during peacetime, an adequate source of experienced Reserve officers. In any emergency, the Medical Department must always draw heavily on the Reserves to meet its personnel requirements, since the small number of medical officers in the regular Navy can, at best, provide only the nucleus of an expanded organization. In order that an adequate number of medical officers may be available for naval service at all times, the Medical Corps, USNR, is strengthening its forces by commissioning men from two sources of supply: (1) civilian physicians between the ages of 21 and 52 who may wish to take advantage of the unusual opportunities for postgraduate medical training available to reserve medical officers at outstanding civilian medical schools and large naval hospitals; (2) recent graduates of accredited medical schools who may elect to serve all, or part, of their internship under Navy sponsorship.

Medical graduates who elect to serve civilian internships under Navy sponsorship are commissioned as lieutenant (JG), Medical Corps, U. S. Naval Reserve. For each year of Navy-sponsored rotating internship in a civilian hospital, they will be expected to serve one year in naval medical activities, except where the second twelve months of a 24-month rotating internship is a straight service. This straight service is considered as a year of residency training.

Upon completion of his internship, the officer may elect to remain on active duty for an additional period of one year or more, qualify for appointment in the regular Navy, be released to inactive duty with a commission of his rank in the Naval Reserve, or resign. Officers who serve their internship in a naval hospital are not required to spend an additional year in the Navy.

The Navy's Graduate Training Program offers young interns an unparalleled opportunity to complete their internships and residencies in modern hospitals at Government expense, and to choose from a great variety of courses in all of the medical specialties. In 1948 some 280 medical officers were taking their approved residency training in 17 specialties in naval hospitals, and 97 were in approved residency training in 31 specialties in civilian hospitals.

Both the young medical graduate and the experienced physician find the widest range of latitude and interest within the framework of medical practice in the Medical Corps. In addition to the ample opportunity afforded for all types of practice, the Medical Corps offers unique opportunities: (1) in pure research at institutions such as the National Naval Medical Center, the

largest organization of its kind in the world; (2) in teaching in the classrooms and on the wards at the Medical School of the Center; and (3) in preventive medicine and public health at many posts, such as Guam, where the Navy has the responsibility for the well-being of entire civilian populations. Moreover, the facilities for training and practice in military specialties, such as aviation, submarine, and atomic medicine, are outstanding. Navy-sponsored postgraduate training in atomic medicine, for example, will equip the doctor either for a career of research in the fields of radiobiology or radiochemistry, or for clinical work involving the use of radioactive isotopes in diagnosis and treatment. Special training in aviation medicine may lead to the degree of Master of Science or Doctor of Philosophy in one of the related basic sciences.

Considerable impetus was given to the development of the Medical Corps, with the establishment in 1842 of the Bureau of Medicine and Surgery, which provided medical officers for the first time with an organization of their own within the Navy Department. During the next century Congress continued to pass legislation designed to improve the medical organization and place medical officers on a footing more nearly comparable with that of line officers. In 1899 it abolished "relative rank" for all naval staff officers, and substituted actual rank. For many years before that time medical officers had been designated as staff officers, and the relative ranks between them and line officers were clearly defined. Surgeons, for example, had the relative rank of lieutenant commander or lieutenant. Under the Equalization Act of 1926, the promotion of staff officers was placed on the same basis as that of line officers. In 1936 the legal provisions governing the advancement in rank of staff officers, by selection from such officers of the next lower rank, were extended to include all staff officers from the rank of lieutenant to and including the rank of rear admiral.

Today medical officers have a rank and status comparable to that of line officers, except that they are not entitled to command at sea. They fill top posts throughout the naval medical service, such as Surgeon General, assistant chiefs of the Bureau of Medicine and Surgery, inspectors, commands of medical activities, and heads of services in naval hospitals. They supervise activities relative to sanitation, medical and surgical service, technical training of medical and other personnel, and employment of medical facilities.

The size of the Medical Corps was established by law in 1916. In that year Congress provided that the total authorized number of commissioned officers of

the Medical Corps should be set at 0.65 percent of the total authorized personnel of the Navy and Marine Corps. The authorized strength of the Corps is seldom maintained, since the number of officers on the active list fluctuates from year to year in accordance with the size of the Navy's annual appropriation.

THE DENTAL CORPS

With the advancement of the Dental Corps to mature status as a specialized staff corps, the advantages of naval dentistry as a professional career also were greatly enhanced. In addition to job security and a wide opportunity to practice all types of dentistry, the naval dental service now provides the young dental school graduate, as well as the experienced dentist, with outstanding opportunities for professional advancement. During their naval career dental officers may take postgraduate training in specialized dental subjects, in naval and civilian institutions at government expense, carry out dental research projects of importance to all dental practitioners, engage in classroom teaching, and make valuable contributions to professional literature as a result of their study, practice, and research.

The regular postgraduate courses offered at the Naval Dental School, National Naval Medical Center, Bethesda, Md., are designed to demonstrate recent advances, specialized procedures and techniques to dental officers of the regular Navy. The instruction offered in this category, consists of a general postgraduate course, a specialized course in oral surgery, and a specialized course in prosthodontia.

All of these courses are of six months' duration, and are in continuous session at the Naval Dental School with a 2-week interval between graduation and convening of the next similar course.

A course is offered for dental officers at the Industrial College of the Armed Forces, Army War College, Washington, D. C. and a logistics course at the U. S. Naval War College, Newport, R. I. In addition to the instruction offered at Army and Navy institutions, the Navy also sponsors at many colleges and universities a program of training for dental officers that leads to the granting of a certificate on completion of a course, or to the conferring of the degree of Master of Science in a specialized field.

Dental postgraduate, intern-type training, has been made available for a number of young men who are recent graduates in dentistry and who will accept appointments in the rank of lieutenant, (jg) in the Dental Corps of the Regular Navy. One group will be assigned to duty under instruction at the U. S. Naval

Dental School, National Naval Medical Center, Bethesda, Md., and the other group to duty under instruction at either a U. S. Naval Hospital or some other comparable naval dental activity. Both groups will exchange assignments at the end of six months and continue their training another six months, thereby acquiring experience in all professional branches of dentistry as they are practiced in the U. S. Navy. At the end of twelve months a certificate will be issued to all who satisfactorily complete the training course.

Naval Reserve dental officers are invited to attend 14-day training periods with pay and allowances at naval stations or in naval vessels.

A dental professional training program is provided for dental Reserve officers who are in an inactive duty status. A general postgraduate course, a maxillofacial prosthesis course and an ocular prosthesis course are given at the U. S. Naval Dental School, National Naval Medical Center, Bethesda, Md. These courses are of two weeks' duration. The various naval districts are allotted quotas for this training program. The dental Reserve officers who attend these courses are assigned to active duty for the period of instruction, with full pay and allowances, including transportation.

In addition, dental professional training programs are in effect in several naval districts under the direction of the dental officer in charge of dental Reserve activities.

Officers who are particularly interested in dental research may pursue such work at the Naval Medical Research Institute, National Medical Center, where research facilities include almost every field of applied science, and laboratories are equipped with modern scientific instruments comparable to those of outstanding research institutions in civil life. The Navy also encourages dental officers to carry on studies of diet, mouth hygiene, therapeutics, and other professional subjects in their regular duty assignments where patients of many types and from every section of the country provide excellent case material for study and experimentation.

Close association with medical and dental officers from widely dispersed professional schools is one of the most attractive features of naval life. Dental officers also are urged to maintain membership in professional societies and to contribute papers to professional journals, such as the *Naval Medical Bulletin*.

Practical experience of many types can be gained through the widely varied positions assigned dental officers in the Navy and Marine Corps. They serve in administrative positions at the Bureau of Medicine and Surgery, in hospitals, dispensaries, clinics, supply depots,

and other medical and dental facilities. In contrast to civil life, dental officers are always provided with adequately trained assistants. Enlisted men, trained as dental technicians, assist the dental officer at the chair, in the prosthetic laboratory, and in numerous administrative and accounting duties required of any dental clinic.

Since naval dental care is provided without charge, dental officers have wide latitude in choosing the best possible type of treatment or restoration.

In 1948 there were about 800 dental officers in the regular Navy, and approximately 7,000 in the Dental Corps of the Naval Reserve. The authorized strength of the Dental Corps is one dental officer for each 500 persons in the Navy and Marine Corps.

THE MEDICAL SERVICE CORPS

The Medical Service Corps was established by act of Congress in 1947, and is the youngest of the five specialized corps in the Medical Department. This corps is the outgrowth of a long-felt need for specialists, trained in administration and in professional fields other than medicine and dentistry, who are needed to perform highly essential duties throughout the naval medical service.

Members of the Medical Service Corps are trained in two highly specialized but unrelated fields, both of which are open to qualified women. One group consists of personnel trained in supply, administration, and other fields related to the business management of medical facilities; the other group comprises those trained in sciences allied to medicine or dentistry, including entomology, industrial hygiene and public health, radiobiology, bacteriology, physics, chemistry, pathology, serology, sanitation engineering, virology, psychology, pharmacology, and optometry.

Qualified civilians between the ages of 21 and 48 may be commissioned as Medical Service Corps officers allied science in the Naval Reserve. The grade given them on entering the service depends upon age and upon professional qualifications and attainments. All appointments in the Naval Reserve Medical Service Corps, allied science are limited by law to applicants who hold an acceptable baccalaureate degree in optometry, pharmacy, or other sciences allied to medicine, except that commissioned warrant and warrant officers of the Hospital Corps of the Naval Reserve who are otherwise qualified are eligible and may apply for a commission in the Medical Service Corps Reserve, administration and supply. Officers promoted from the Hospital to the Medical Service Corps are specialists

in hospital administration, and function principally as Division heads of personnel, finance, commissary, and maintenance departments in naval hospitals and other medical department facilities.

All officers of the Medical Service Corps of the Naval Reserve are eligible for postgraduate training in their particular specialty on a basis equal to that of other reserve officers of the Medical Department.

The present strength of the Medical Service Corps has been set at 20 percent of the authorized strength of the Medical Corps. Pending a study of actual needs, the present procurement for officers of the Medical Service Corps of the Naval Reserve has been set at 200.

THE NURSE CORPS

The Navy Nurse Corps was established by act of Congress 13 May 1908, and has the distinction of being the first staff corps to employ women. Since that time, nurses have proved beyond doubt that women can play a highly important role in the Navy. Four years before the outbreak of World War I, they were assigned to overseas duty, attending the Navy's sick in far-flung outposts in the Pacific area. During World War II, when they served aboard hospital ships and evacuation transports and at shore stations of many types, they became known in every country where our naval forces were stationed, and on each of the seven seas.

As early as 1811, 9 years before the birth of Florence Nightingale, Surgeon W. P. C. Barton recommended to the Secretary of the Navy that nurses be included among the personnel of Navy hospitals. Despite such forward-looking recommendations, naval medical officers had to get along for almost 100 years without nurses before they finally became an official part of the Navy. In the meantime, however, some nurses served in the Navy as volunteers. In 1863 the first of these served aboard the Navy's first regular hospital ship, the USS *Red Rover*, a luxuriously appointed vessel on which, according to Dr. Ninian Pinckney, Fleet Surgeon, poor Jack was cared for "in a style never before dreamed of in the Navy."

In 1908, during President Theodore Roosevelt's administration, Surgeon General P. M. Rixey, an able champion of a strong Medical Department, insisted that it keep pace with an expanding Navy, and was instrumental in establishing the Nurse Corps. In the same year the first nurses, a group of 20, were assigned to active naval duty at the Naval Hospital in Washington, D. C., which was closely associated with the Naval Medical School. Shortly afterwards nurses were ordered

to duty at various naval hospitals throughout the country, and in 1910 were sent to the Philippines, the first group to be assigned to overseas service.

During World War I nurses made considerable progress in enhancing their position within the Navy. Their fine achievement at hospitals in the British Isles and in France, and in caring for influenza victims in this country, dramatized the importance of nurses to the military services and helped place the organization of the Nurse Corps on a more solid footing. Individually, however, nurses occupied a peculiar position within the naval service. While the Judge Advocate General recognized them as an official part of the Navy, subject to naval discipline, Congress accorded them military status, but did not recognize them either as officers or as enlisted personnel. In 1947 Congress clarified its previous position, granting nurses permanent commission grades with commensurate pay and allowances.

When the Japanese struck at Pearl Harbor, nurses were on duty at many naval shore facilities, and aboard the USS *Solace*. Soon they were serving on all hospital ships, evacuation transports, and in Africa, Europe, the Solomons, the New Hebrides, and the Aleutians, as well as in North and South America. By the end of World War II personnel of the Nurse Corps reached the amazing total of 11,021, of which 1,799 were in the Regular Corps and 9,222 in the Naval Reserve.

The quality of their services was as impressive as their numbers. They instructed thousands of hospital corpsmen in bedside nursing duties, trained scores of native girls on Guam, who, during the Japanese occupation, supplied the only skilled nursing care on that island. The nurses also assisted the Brazilian Government in setting up a Nurse Corps for that country's air force. Nurses served with airborne evacuation teams which flew out from Okinawa, alone, over 4,500 casualties within a 30-day period; they trained young women (Waves) for hospital duty to relieve hospital corpsmen for front-line service; and they cared for hundreds of wounded Americans who had been interned in Japanese prison camps in the Philippines.

Now that the war is over, the Nurse Corps is facing its peacetime responsibilities with the same assurance that brought success in wartime. To provide a reserve pool able to cope with an emergency, it is now seeking to enlist 7,000 nurses as members of the Volunteer Naval Reserve which was established in 1938 as a vital part of the Naval Reserve.

At present the total authorized number of officers in the Nurse Corps is six for each 1,000 Navy and Marine Corps personnel. The Superintendent of the Nurse

Corps, holding the grade of captain, is responsible for the administration of the Corps.

Nurses have authority in medical and sanitary matters, and in other work *within the line of their professional duties*. Their principal responsibilities are twofold: caring for patients, including naval personnel, dependents of naval personnel, and veterans, in hospitals, and training personnel of the Hospital Corps. They are sometimes given collateral duties as anesthetists, physical therapists, and flight nurses.

THE HOSPITAL CORPS

Some of the outstanding pages of naval history have been written by hospital corpsmen and their counterparts. From the plucky wood-and-sail frigates down through the days of experimental ironclads to the hard-hitting, steel fighters and fast-moving amphibious forces of today, hospital corpsmen have taken part in every important encounter as members of naval and Marine Corps units. Loblolly boys, surgeon's stewards, male nurses, baymen, and hospital corpsmen—all have braved death to aid the Navy's wounded where they fell.

Today the officer and enlisted personnel of the Hospital Corps must be highly trained technicians, versatile and adaptable, familiar with the new techniques and equipment of modern medicine. Its officers are usually assigned to various administrative positions. In some instances they are heads of administrative activities; in others, when the size or workload warrants, they serve as assistants to Medical Service Corps and other officers.

Enlisted personnel, on the other hand, are directly responsible for the care of the Navy's sick and injured. Today, in a Navy that fights beneath and on the sea as well as in the air, this task has become a highly specialized and complicated one. Hospital corpsmen now serve as members of the crews of airplane squadrons, paratroop groups, diving units, submarines, amphibious forces, and every type of Navy ship.

Ashore, they assist the doctor in the wards and laboratories of naval hospitals and other medical facilities, and aid the dentist in the dental clinic. They are trained in the use of the iron lung, oxygen tents, hydrotherapeutic, X-ray and diving apparatus, the microscope, and other complicated equipment. In addition to their professional skills, they must be trained seamen, be familiar with office routine, know how to manage a diet kitchen, and be schooled in the amphibious landing techniques of the Marines.

Qualified medical and dental personnel are often assigned to schools which teach advanced technical

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procedures. Such courses as X-ray, laboratory, and pharmacy are available to hospital corpsmen; courses in prosthetic dental procedures and dental repair are available to dental technicians, and administrative courses in clerical procedures, property and accounting, and similar fields are available to both groups.

The activities of the first loblolly boys in the Navy antedate the establishment of the Hospital Corps by more than a century. John Wall, the Navy's first loblolly boy of record, obtained his initial battle experience when he helped take care of American wounded aboard the frigate *Constellation* after her victory over a French frigate, during the undeclared war against France in 1799, just 8 months after his recruitment into the Navy.

For the next hundred years the men who attended the Navy's sick and injured were known by numerous titles. The titles changed from "loblolly boy" to "surgeon's steward," to "nurse," to "bayman," and finally to "hospital corpsmen." In an effort to provide an organization within the Medical Department able to care for the large number of naval personnel enlisted during the Spanish American War, Congress established the Hospital Corps, providing for the grades and ratings of warrant pharmacist, hospital steward, hospital apprentice 1, and hospital apprentice. The commissioned grade of chief pharmacist was added in 1912. In 1916 Congress reorganized the Hospital Corps, on the same basis as it exists today, and, among other things, broadened the rating structure to include the ranks of chief pharmacist, pharmacist, and rate of chief phar-

macist's mate, pharmacist's mates 1, 2, and 3, and hospital apprentices 1 and 2. The reorganization act of 1947, establishing the Medical Service Corps, did not alter the basic structure of the Hospital Corps, but did provide for the following new titles which became effective in April 1948:

MEDICAL

Title	Abbreviation
Chief Warrant Officer (HC)	CWO (HC)
Warrant Officer (HC)	WO (HC)
Hospital Corpsman Chief	HMC
Hospital Corpsman 1	HM1
Hospital Corpsman 2	HM2
Hospital Corpsman 3	HM3
Hospitalman	HN
Hospital Apprentice	HA

DENTAL

Title	Abbreviation
Chief Warrant Officer (HC)	CWO (HC)
Warrant Officer (HC)	WO (HC)
Dental Technician Chief	DTC
Dental Technician 1	DT1
Dental Technician 2	DT2
Dental Technician 3	DT3
Dentalman	DN
Dental Apprentice	DA

By law, the authorized strength of the Hospital Corps (warrant officers, chief warrant officers, and enlisted personnel) is limited to 3½ percent of the authorized strength of the Navy and Marine Corps. In 1945, the total personnel of the Hospital Corps reached the record figure of 140,000, or more than the strength of the whole Navy in prewar years. Today, the peacetime personnel of the Hospital Corps number about 16,000.

CHAPTER 3

THE BUREAU OF MEDICINE AND SURGERY

ORGANIZATION AND GROWTH

For almost 50 years after the establishment of the Navy Department in 1798, there was no distinct naval organization responsible for supervising and directing medical activities. Medical officers aboard ship lacked coordination and their standards of medical service were far from uniform.

Congress made several attempts to remedy this situation. In 1799, it approved the appointment of a Physician General to supervise medical activities of the Army and Navy; in 1815, it created a Board of Commissioners which was given the collective responsibility of assisting the Secretary for the Navy's material and logistic functions. The joint efforts of this board did not prove too successful, since it was impossible to fix the responsibility on any one part of the Naval Establishment when criticism arose concerning some activity.

As a result, Congress, in 1842, established five bureaus, one of which was the Bureau of Medicine and Surgery to replace the Navy Commissioners. The main functions of the Navy Department were distributed among these bureaus, and the head of each bureau was made accountable to the Secretary for the performance of his specialty. The Bureau of Medicine and Surgery, as the executive authority of the Medical Department, was charged with the management and control of all medical facilities and activities of the Navy.

The task of organizing the Bureau of Medicine and Surgery was assigned to Surgeon W. P. C. Barton, who was chosen as the first Chief of the Bureau from the 60 surgeons then serving in the Navy. Barton developed the Medical Corps, coordinated the activities of medical personnel, improved recruiting methods, and formulated the necessary rules to govern the Bureau.

From the modest structure of 1842, largely con-

cerned with the direction of a handful of medical personnel, the Bureau of Medicine and Surgery has grown into a complex organization staffed by the five specialized corps previously discussed. Its internal system has shown great flexibility in meeting changed conditions of naval warfare. The creation of the divisions of Submarine Medicine, Aviation Medicine, Dentistry, and Atomic Defense reflects important technological advances, such as the introduction of the submarine into the Navy in 1900; the first use of aircraft in fleet maneuvers in 1913; the official recognition of dentists as a vital part of the Navy in 1912; and the development of the atomic bomb during World War II.

Greater responsibilities for the health of a rapidly expanding Navy also has led to a sharp increase in naval medical personnel. By the end of World War II the professional and semiprofessional staff of the Medical Department had grown to six times its prewar size—reaching a total of 31,000 persons. While the peacetime staff has been considerably reduced, the activities of the Bureau are still so extensive that over 20 principal units are required to handle its administrative functions.

In recent years the Bureau has also been brought into closer relationship with the other components at the Naval Establishment. Like the other bureaus of the Navy Department, the Bureau of Medicine and Surgery, for a century, lacked coordination with the other elements of the Naval Establishment except through the civilian Secretary. In 1942, this situation was corrected to a great extent when the Chief of Naval Operations was made responsible for the "coordination and direction of effort" of the bureaus and offices in the field of logistic support. The Surgeon General is still responsible for quality, volume, and promptness of the medical services, but the CNO can now issue

statements on as broad terms as practicable to the Bureau, and through it to the Shore Establishment, of what is needed, when it is needed, and where it is needed. It is also his duty to review and evaluate the progress of the Bureau of Medicine and Surgery and other bureaus, and to check their progress in meeting these requirements, and to issue necessary instructions to obtain compliance. The Under or Assistant Secretary also has supervision of many aspects of business administration, within the Bureau.

THE SURGEON GENERAL

In his dual role as head of the Medical Department and the Bureau of Medicine and Surgery, the Surgeon General is charged with the supervision and direction of all medical activities of the Navy. He is responsible to the Secretary of the Navy for carrying out the functions delegated to the Bureau by *Navy Regulations* and is the direct agent of the Chief of Naval Operations relative to all matters within the Bureau that affect the preparation and readiness of the naval forces for war. He is appointed from the list of surgeons of the Navy, and holds the permanent rank of rear admiral. His appointment for a 4-year term is made by the President, by and with the consent of the Senate.

The broad administrative functions of the Surgeon General are similar to those of the general manager of any large organization in civil life. One of his most important functions is to determine the main lines of administrative policy. Government and other officials come to him for consultation and advice regarding a course of action in professional and administrative matters. It is also his duty to "spell out" in detail the general terms of legislative policy. From time to time he issues necessary orders, directives, circular letters, and other communications and, with the Secretary of the Navy, he is responsible for joint letters. It is through these written communications that the Surgeon General functions as an administrator.

The Surgeon General is responsible for coordinating the operations and efforts of the Bureau of Medicine and Surgery. In some cases this is achieved through direct contact with the persons concerned, as in semi-weekly conferences of division chiefs of the Bureau or inspections, but the most widely used method of coordination is that of control by facts, rather than control by persons. Reports and other communications from the field are one of the most effective means of keeping the Surgeon General properly informed of the Bureau's operations at every level.

Distribution of work assignments among the various units of the Bureau is another responsibility of the Surgeon General. While major functions are clearly defined in *Navy Regulations* and other Federal statutes, during wartime the Surgeon General must supplement and adjust such assignments in the interest of good administration. He also nominates individuals to fill top professional and administrative posts in the Bureau, but such appointments are subject to the final approval of the Navy's Bureau of Personnel.

The necessity of maintaining the medical and dental services of ship and shore facilities throughout the world makes the supervision and direction of the Bureau's operations a complex task. The Surgeon General, therefore, must divide much of his work-load among his subordinates. While he does not personally perform all of the tasks assigned to him, he must see that these duties are performed somewhere along the line.

A considerable portion of the Surgeon General's time is devoted to acting as liaison officer for the Bureau and to participating in the deliberations of private and extra-legal boards and committees. He maintains contacts with officials of the Navy Department, other Federal agencies, and private organizations concerned with the improvement of health, hygienic, and sanitary conditions. A close relationship is maintained with the group of honorary civilian consultants who are of inestimable value in making suggestions for improvements in the Bureau's operations. During World War II these consultants made important decisions on such matters as the distribution of civilian and service personnel, training and postgraduate schools, and questions of general medical and dental practice and techniques.

DEPUTY AND ASSISTANT CHIEF OF BUREAU

Although the law provides that a medical officer of the grade of surgeon, passed assistant surgeon, or assistant surgeon of the Navy may be detailed as Deputy and Assistant Chief of Bureau, it is customary to select an officer of higher grade for the position. He is largely concerned with the administration of the work of the Bureau; with the management, control, upkeep, and operation of naval medical activities, schools for the training of medical personnel, and finances pertaining thereto; the custody and preservation of records, accounts and property under the cognizance of the Bureau. A Bureau policy put into effect 5 December 1944 requires that he hold semiweekly conferences with division heads in order to enable them to keep abreast of developments in all of the divisions. He advises and

reports to the Surgeon General on all matters of importance. The broad scope of his responsibilities relieves the Chief of the Bureau of most of the details of the functioning of the Medical Department.

In the absence of the Surgeon General the Deputy and Assistant Chief of Bureau temporarily performs the duties of that office.

SPECIAL ASSISTANTS

Three Special Assistants report directly to the Surgeon General:

Legal assistant.—Advises on legislative matters as they pertain to the Bureau, reviews and clears requests from Bureau officials to the Judge Advocate General for legal opinions, and drafts proposed legislation as required.

Public relations officer.—Acts as public relations consultant and advisor to the Chief of the Bureau, Deputy and Assistant Chief, and other Bureau officials, and acts as special representative of the Surgeon General when making public relation contacts outside the Bureau.

Red Cross liaison officer.—Provides liaison service between the American Red Cross and the Bureau on all matters pertaining to the policy of the Bureau and activities of the Medical Department as a whole.

Advisory committees which report directly to the Surgeon General are:

Honorary Civilian Consultants.

Reserve Consultants.

Policy Board.

Two general inspectors reporting directly to the Surgeon General are:

General Inspector, medical department.—Plans, coordinates, and directs the inspection program for the Medical Department; conducts special inspections and investigations, as necessary; reviews analytically and makes recommendations on all inspection reports, other than dental, submitted by field inspections; maintains liaison with the office of the Naval Inspector General, the general inspector, Dental Service, and all divisions and offices of the Bureau.

General inspector, Dental Service.—Plans, coordinates and directs the inspection program for the Dental Service; maintains liaison with the general inspector, Medical Department; conducts special inspections and investigations, as necessary; reviews analytically and makes recommendations on all inspection reports submitted by dental inspectors.

ANCILLARY DIVISIONS

As a result of an intensive study of all activities of the Bureau, the organization was divided, according to function, into two broad categories: (a) administrative, and (b) professional and technical. The administrative divisions, four in number, are directly responsible to the Surgeon General's Office. Primarily concerned with management and finance, they have been assigned functions as follows:

Administrative division.—Develops and coordinates the administrative management program of the Bureau and the Medical Department; conducts organization and methods studies for the Medical Department; administers Bureau and field civilian personnel programs; maintains Bureau office services, including space control, equipment, printing; forms design, mail, etc.; performs special services relating to medical and dental care in non-naval facilities, and the care of the dead.

Finance division.—Formulates and executes Bureau and Medical Department fiscal policies; prepares Bureau and Medical Department budgets; coordinates field requests for allotments of appropriational funds; maintains budgetary controls; prescribes accounting and auditing systems for control of Medical Department funds and property, audits receipts and expenditures; maintains control of civilian personnel allowances and ceilings in the field, and maintains property records.

Medical statistics division.—Plans, initiates, coordinates, evaluates, and directs programs and projects in medical statistics; prepares statistical analyses, reports, and publications on morbidity, mortality, invalidings from service, etc.; provides a statistical consulting service for all naval medical activities.

Publications division.—Develops policies relating to publications of the Medical Department and exercises control thereof; edits and publishes the *Naval Medical Bulletin*, the *Hospital Corps Quarterly*, and other Medical Department booklets and pamphlets; administers the Naval Medical Museum.

ASSISTANT CHIEFS OF BUREAU

Definite authority has been delegated to the five Assistant Chiefs of Bureau who are responsible for specific professional and technical operating functions.

Assistant Chief of Bureau for Research and Medical Military Specialties coordinates and correlates all phases of the research and preventive medicine programs, and the programs of such medical military specialties as atomic energy and special weapons medicine.

This section has been divided into four divisions:

Research division initiates and coordinates medical research activities; evaluates proposals for research, and maintains a review of scientific medical developments for application to Navy medical operations.

Preventive medicine division determines the need and establishes the policies in preventive medicine; initiates preventive measures necessary to maintain the health of the Navy; has cognizance of epidemiology, industrial health, accident prevention, sanitation, insect and pest control, tuberculosis control, the medical aspects of venereal disease control, and quarantine.

Atomic defense division plans, develops and controls all atomic defense policies and programs which come within the cognizance of the Bureau and the Medical Department, including research in radio-active material and such problems as arise in connection with the production of fissionable materials and their peacetime utilization, and maintains liaison with accredited agencies concerned with the atomic energy program.

Special weapons medicine division determines, initiates, and administers medical policies and programs relative to special weapons used by the Navy, applies results of special weapons medical research.

Assistant Chief of Bureau for Personnel and Professional Operations coordinates and correlates the professional, and personnel physical qualifications and medical records operations of the Bureau and Medical Department to develop and maintain high standards of performance by naval medical personnel, and directs the post-war Naval Reserve Program for the Medical Department. To assist in carrying out the above functions three divisions have been established:

Personnel division which administers personnel programs for the Medical Corps, Medical Service Corps, Hospital Corps, and Nurse Corps; determines military personnel needs; establishes and controls military personnel complements; performs personnel functions for all Medical Department officers and enlisted personnel, except dental; plans and coordinates recruitment, and plans and coordinates professional medical and training activities of the Naval Medical Reserve.

Professional division establishes professional standards and policies for the Department as they relate to medicine, surgery, neuropsychiatry, physical medicine, pharmacy, optometry, and hospitalization; directs the training program for Medical Department military personnel, plans and prepares audio-visual training aids for use in sanitation and health programs.

Physical qualifications and medical records divisions reviews, makes recommendations, and takes action

on all reports or requests involving physical examinations and physical qualifications of all past or present naval or Marine Corps personnel; files and preserves medical records; acts on requests for information from and copies of these medical records, reviews and takes action on reports of survey and retiring boards, and communications pertaining to medico-legal matters.

Assistant Chief of Bureau for Dentistry coordinates and correlates all phases of the dental program to provide dental services required by all branches of the Navy.

Dental division plans and directs the administration of the dental service; establishes professional standards and policies for dental practice; recommends action pertaining to complements, advancement, training, and assignment of dental personnel, and recruitment and training of the Naval Dental Reserve.

Assistant Chief of Bureau of Planning and Logistics coordinates and correlates Medical Department planning and the procurement of Medical Department material to provide effective logistic support to the Navy Establishment.

Planning division determines broad medical programs and coordinates them with basic naval operations; designs medical installations; recommends on real estate acquisitions and establishment or disestablishment of hospitals and other Medical Department installations; authorizes special maintenance and repair projects for field activities; controls classified matter.

Materiel division establishes basic policies governing Navy medical materiel; directs the development and accomplishment of special medical materiel programs in support of naval operating plans; develops standards for medical and dental supplies and equipment; determines requirements for medical materiel; prescribes medical stores accounting procedures.

Naval medical materiel board examines and passes upon new drugs, chemicals, inventions and devices related to medical, surgical, dental, hospital and field equipment and supplies.

Assistant Chief of Bureau for Aviation and Operational Medicine coordinates and correlates all phases of the programs relating to aviation and operational medicine, including submarine, amphibious, Marine Corps Field, dispensary, and sick bay operations, to provide for the medical needs in these fields of military medicine.

Aviation medicine division plans and administers the Naval Aviation Medical Program, including the determination of physical qualifications, aptitude testing, and training; applies results of aviation medical

research; conducts special projects in the use of oxygen, low pressure chambers, altitude devices, survival equipment, etc.

Submarine medicine division determines physical requirements of submarine personnel; applies results of submarine medical research; handles training and assignment of technical specialties.

Dispensary medicine division studies and makes recommendations concerning medical activities, policies, and services in naval stations, naval shipyards, etc., and the medical activities afloat.

Amphibious and Marine Corps field medicine

division handles training and assignment of technical specialists; applies results of amphibious medical research, and analyzes and makes recommendations concerning all medical needs for these special activities.

The work of the several divisions is, to a considerable degree, related and interdependent. It is performed almost entirely under the immediate direction and supervision of officers of the Medical Corps, Dental Corps, Medical Service Corps, Hospital Corps, and the Superintendent of Nurses, all of whom are well versed through wide service experience and special training which enables them to maintain the efficiency of the Bureau and Medical Department at a high standard.

CHAPTER 4

FACILITIES OF THE MEDICAL DEPARTMENT

Section A

NAVAL HOSPITALS

Early facilities or provisions for care of sick.—The earliest type of naval hospitalization permitted leaving the sick or wounded ashore in private homes and paying for their care and subsistence. This was a constant source of dissatisfaction, both among officers and enlisted men. Such services as were provided varied greatly from port to port. There was little naval supervision, and the Government was often overcharged. The type of accommodations provided the sick differed almost as widely as the standard of professional treatment. Sometimes the service was good; more often it was very bad. In Baltimore, a doctor supplied all necessary items "except clothing and funeral expenses" at the rate of 55 cents a day; while at Alexandria, Va., a local almshouse cared for sick seamen at the higher fee of \$5.00 a week. Practically no naval officers and only a few seamen took advantage of such scanty accommodations.

Nor did the procurement of temporary hospital buildings by the Navy, many of which were totally unsuited for the purpose, improve the situation greatly. One officer, in 1810, described the wretched structure which passed for a hospital at New York, as one with no other covering to protect the sick from the lash of wind and rain than a "common clapboard outside, without lining or ceiling on the inside." Is it any wonder that the Secretary of the Navy, in a later statement urging immediate establishment of naval hospitals, disclosed that three out of five patients at such temporary institutions deserted as soon as they were able to travel?

This unsatisfactory condition prevailed for another 15 years before plans for naval hospitals moved out of the blueprint and into the construction stage.

Growth and development of naval hospitals.—The opening of the first naval hospital at Portsmouth, Va.,

in 1830, marked a significant advance in the history of naval medicine. This well-planned hospital, a three-story hollow square with an impressive facade embellished with a bold Doric portico of 10 columns, was so modern in conception that it has served as a model for naval hospitals for over a century. As the forerunner of naval hospitals, it has set the pattern in hospitalization. The standard established has been instrumental in making United States naval hospitals the finest in the world.

Designed and constructed by John Haviland, a Philadelphia architect with bold imagination and consummate skill, the first naval hospital structure made some innovations in the planning and utilization of space that were almost revolutionary for their time. Some of the outstanding architectural features of the early Portsmouth hospital were: (1) spacious wings with a capacity of 102 beds, which allowed a space of 10 x 7½ feet for each bed, permitted expansion to 204 beds if necessary, and, in addition, provided for a medical examining room, nurses office, and diet kitchen; (2) fireproof construction throughout with arched ceilings of brick; (3) ample space for necessary supporting services, such as a pharmacy, commissary, washroom, and offices; (4) well-designed wards which offered plenty of natural light and cross ventilation.

Here the Navy made its initial attempt to replace the previous makeshift methods of hospitalization with an effective system of professional care. The Portsmouth hospital, with its 30-odd patients and a 5-man medical staff, all located in the south wing, was a far cry from modern naval hospitals. The one surgeon lacked practically every tool and technique that has made modern hospitals so effective. There was no nursing profession as such. There was no anaesthetic to kill pain, no ophthalmoscope for examining the eye,

no clinical thermometer with which to take a temperature. Even the microscope was a mere toy. Yet, when compared with the earlier lack of method in treatment of the sick, the type of hospital care at Portsmouth represented a tremendous advance.

In addition to setting the pace for improvements in the methods of caring for the sick, the Portsmouth hospital has influenced the planning and development of naval hospitals in two other ways: (1) its early administrator developed the first basic plan for naval hospital administration, and (2) its ideal physical layout, embodying many features of our streamlined hospitals, set a standard for efficient planning, and utilization of space.

When Surgeon W. P. Barton took over the administrative helm at Portsmouth, replacing Surgeon Williamson who only served a month, he fell heir to some perplexing managerial problems. His shrewd handling of these problems, as well as the fact that he authored the first text on the organization and management of a marine hospital, earned him the title of "Father of Naval Hospital Administration."

Like many present administrators, he was faced with the task of balancing the budget. The hospital, during its first 61 days, had operated in the "red" to the extent of \$238.64, despite its small number of patients. After a careful study of expenditures for provisions, Barton uncovered two reasons for the deficit: in his opinion, patients and staff were eating too well, and evidences of fraud existed in the kitchen.

A washerwoman, held guilty of receiving a handout from the kitchen, was immediately dismissed, and the washing was put out at piecework. Next, he drew up a plan to show how hospital maintenance expenses, as well as the cost of feeding, nursing, and treating the sick, should be squeezed out of the 25-cent per day ration for each patient. He balanced the budget by cutting the patient's food allotment in half, and using the remainder for maintenance expenses, wages, and other items. Barton's attempt to organize Portsmouth on a "sure basis of economy and system" won him a commendation from the Secretary of the Navy; but his parsimony won him the enmity of both patients and staff.

The progress in naval hospitalization since 1830 kept pace with the rapid strides made in civilian hospital services and medical education in this country during the past century. In 1830 there were only 43 civilian hospitals in this country; now there are about 7,000. The number of medical schools grew from 23 in 1828 to 77 in 1948. Instead of one small hospital

at Portsmouth in 1830, the Navy now has over 32 fully equipped naval hospitals and 122 dispensaries in the continental United States, and 5 hospitals and 61 dispensaries outside the continental United States. These vary in size; the smaller accommodate about 500 patients, the larger, 2,000.

It is in naval hospitals that the Medical Department, as a conserving force of the personnel of the Navy, becomes most apparent; that its sphere of usefulness is best demonstrated, and that all pertaining to the sick and injured finds its fullest development.

The wisdom of providing adequate medical and hospital care for the sick and wounded was amply demonstrated by the high standards of fitness for duty maintained among naval personnel during World War II. How well that objective was achieved can be seen from the fact that a little over 2 years after Pearl Harbor, more than 55 percent of all wounded sailors and Marines had been returned to active duty. Less than 2 percent were invalidated from the service!

Definition.—Legally, the term "naval hospital" can be applied only to those medical activities established by order of the Secretary of the Navy, under authorization of Congress.

Geographical distribution of naval hospitals.—Location of naval hospitals depends upon many factors: their accessibility, their ability to serve the fleet, and their nearness to large operational or training centers; transportation facilities, and ports of embarkation and debarkation. For the Navy, these factors indicate a grouping of hospital facilities along the coastal states.

Certain hospital sites have been selected with emphasis placed on the geographical location, primarily for the treatment of certain specific diseases, such as tuberculosis, rheumatic fever, and arthritis, in which climatic conditions are a therapeutic factor.

Most naval hospitals are self-sustaining, being classified as *regular* or *general* hospitals. However, many have highly specialized, rehabilitation and professional services.

The Navy has designated certain naval hospitals for special services, such as: amputation centers at Mare Island, Calif., and Philadelphia, Pa.; rheumatic fever facilities at Dublin, Ga., Houston, Tex., and Corona, Calif.; neurosurgery at Bethesda, Md., St. Albans, N. Y., San Diego and Oakland, Calif.; plastic surgery at San Diego and Oakland, Calif., Bethesda, Md., and St. Albans, N. Y.; malignant diseases at Bethesda, Md., Long Beach, Calif., and St. Albans, N. Y.; poliomyelitis at Corona, Calif., and the Georgia Warm Springs Foundation, Warm Springs, Ga.

When psychotics are determined by a medical survey to need institutional care, they are transferred to the U. S. Public Health Service Hospital, Fort Worth, Tex.

During the last war, in addition to the regular naval hospitals, many hotels and similar institutions were taken over and converted into special and convalescent hospitals to augment the regular care and treatment of patients.

Special hospitals were intended primarily to serve Navy and Marine Corps patients who required no treatment other than a change in climate, rest, special diet, psychotherapy or physiotherapy before disposition was made.

Convalescent hospitals were utilized, as the name would indicate, for those patients requiring no treatment other than rest.

Should the patient load reach the same proportions again, it is reasonable to assume that similar steps would be taken to augment the regular hospitals.

Early sources of revenue for naval hospitals.—For more than 130 years (until 1943) the construction and maintenance of naval hospitals like the one at Portsmouth have been made possible in part through the collection of a monthly tax from the pay of naval service personnel. The revenue derived from these pay deductions became known as the Navy Hospital Fund. When the Fund was set up, Congress directed that the money collected should be paid to a board, called the Commissioners of Navy Hospitals. This three-man board, composed of the Secretaries of the Navy, the Treasury, and the Army, was authorized to purchase proper sites and to erect hospital buildings where such structures were not already available on the site purchased.

In addition to the monthly pay deductions, the act of 1811 provided that all fines imposed on naval service personnel, the value of one ration a day allowed each patient during his continuance at a naval hospital, and the pensions of such personnel during their treatment in a hospital should be paid to the fund. In 1900 Congress also directed that all forfeitures on account of desertion should pass to the credit of the fund.

As hospital maintenance costs continued to rise and the number of hospitals in commission increased, a heavy drain was placed upon the fund. Because of the fluctuations in the number of naval personnel, the amount of money in the fund varied so widely that at times the heavy demands made upon it could not be met. In 1911 the balance of the fund was zero; in the 1930's it was several millions.

The fund was abolished in 1943, when Congress assumed the responsibility for establishment and maintenance of naval hospitals. The men who conceived and administered the fund deserve a resounding "well done." For almost a century and a half it had borne the brunt of looking after sick seamen at home and abroad, during the time when Congress made little or no appropriations for such purpose. With its support more than 20 naval hospitals had been constructed. Even the Naval Academy, during the first 7 years of its existence, derived financial support from the fund.

Physical layout.—In the physical size and features of naval hospital establishments, several fundamental conceptions of their purpose and function must be kept in mind. There are a number of reasonable considerations which are frequently overlooked, such as why patient loads are larger, and why individuals stay longer in naval hospitals than in comparable civilian institutions. But every person in the Navy needing hospitalization receives it within a hospital, and is not treated at his own home as are a great number of civilians who are incapacitated. The Navy patient also receives the very best of technical aids, such as X-ray and laboratory services, which are frequently not enjoyed by civilians because of lack of funds to pay for them. Of necessity, Navy personnel remain in the hospital until they are fit for regular duty, while a patient in a civilian hospital usually remains in the institution only while confined to bed and then convalesces at home. Then, too, war casualty cases, who come to military hospitals in large numbers and frequently require extended hospitalization, have no counterpart in civilian institutions.

Naval hospital establishments have a number of common characteristics in their physical pattern. There is usually a center building, or groups of connected buildings, which house the various administrative offices, operating rooms, and the X-ray laboratory, the departmental and divisional offices, and the clinic. The wards and sick officers' quarters are usually an integrated physically connected part of this pattern. In addition, the hospital compound generally includes a number of subsidiary structures physically separated from the main unit and from each other. Examples of such units are officers' quarters, nurses' quarters, Wave quarters, corpsmen quarters, and the auxiliary buildings such as shops, power houses, laundry, garages, storehouses, greenhouse, recreation building, and gate houses.

Flexibility of physical plant.—Compared with the more permanent physical and administrative setup of a civilian institution, the naval hospital must be highly



Figure 1. U. S. Naval Hospital, Philadelphia, Pa.

flexible at all times. Like a willow that bends without breaking, its structure must withstand the sudden shock of an emergency. In such an event it may be forced to increase its bed capacity almost overnight from normal to an unknown number of beds, according to the demands. Temporary or semipermanent buildings for additional wards may spring up on its spacious grounds. Plans must be drawn to cover procurement of supplies and equipment, additional buildings, and staff personnel to handle such a peak load. In the future, the Bureau of Medicine and Surgery, when possible, will try to limit the size of naval hospitals to about 2,000 patients—the maximum for efficient operation both from the professional and administrative viewpoints, as determined by past experience.

Typical organization and chain of command of a

naval hospital.—Should a tour of duty take you to the naval hospitals at Norfolk, San Diego, or Pearl Harbor, you will find that no two are similar in construction. However, it will be found that every naval hospital follows the same basic physical and organizational pattern, despite wide variation in the size, structure, and locations of such institutions. The hospital may be a small unit with 500 beds where the medical officer knows each employee by name, or a large structure with 2,000 beds where the employees are familiar to their "Exec" only by a number on a payroll sheet. It may be located in the midst of a busy metropolis or, as at Pearl Harbor, surrounded by the palm trees and exotic shrubs of a tropical island. In any event, you will find that:

1. Every hospital, in addition to its main buildings, provides limited quarters for some of its staff and



Figure 2. U. S. Naval Hospital, Long Beach, Calif.

maintenance services. This basic physical plan may follow two radically different structural types; it may be a skyscraper, as at Philadelphia, Pa., or a wing-type structure as at Long Beach, Calif.

2. With slight variations all naval hospitals follow the same basic organizational framework, which provides for division of work into functional units and assignment of specific duties to each employee.

In a naval hospital the duties performed by Medical Department personnel are of two types: *professional* and *administrative*. Professional duties are parceled out to units known as *services*, such as medical, surgical, and urological services. Each service is headed by a chief. Administrative duties are divided among units called *divisions*, such as personnel, finance, and commissary divisions. The top official of a division is known as the division head, who reports to the executive officer. Sometimes an administrative officer is given the title and duties of administrative assistant to the executive officer, the object being to give the executive officer more time to spend on the professional duties of his office.

COMMANDING OFFICER

Assignment.—The Surgeon General nominates and recommends medical officers to the Bureau of Naval Personnel for duty as commanding officers of naval medical activities.

The officers so detailed are carefully selected from the ranks of the senior officers of the Corps who are considered "tops" in the field of management and professional procedures.

Functions.—A sound physical and organizational setup are basic requirements to the efficient operation of any hospital. Only by this mechanism can men and materials be effectively used in attainment of recognized goals. The organization of a hospital is not self-starting, nor does it run by itself. If conflicts of authority, and if wasteful operations and other pitfalls of management are to be avoided, there must be at the helm an effective leader who knows how to steer a straight course.

In the management control of a naval hospital, no administrator can hope to perform his job single-handed; he must divide his work, delegating specific tasks to subordinates. In such delegation each subordinate must understand clearly the responsibilities and limits of his authority. Subordinates are assigned by the commanding officer and placed in technical control of the various facilities within the organizational setup of a hospital.

Thereafter, the commanding officer's main job is to keep the organization moving. He must know when to accelerate the parts of his organization which are slowing down. An instruction or suggestion at the right moment in the operating room, the dental office, or other unit of the hospital will keep things moving. These executive tasks involve coordination, direction, supervision, and control.

The commanding officers of hospitals have a twofold responsibility: as a military administrator, subject to orders of a higher competent authority, and as a professional man charged with the care of the patients.

In general, the top medical officer has the same *military authority* as a commanding officer of a ship. He has authority to assign punishment, as merited, on men attached to the hospital, whether on duty or as patients. Such sentences are recorded in the report book, in the journal of the officer of the day, and in the service record of the individual.

He requires obedience to Federal laws, including penal and civil laws of the state and territory. He cooperates with civil or public health authorities in the control of communicable diseases, and reports infectious diseases which are considered a public menace.

He initiates and publishes orders and memorandums, known as hospital orders and regulations, for the guidance of staff and patients. In his absence, or when relieved from duty or detached without relief, the command falls upon the executive officer, and in the absence of the executive officer, upon the medical officer next in rank present at the reservation and regularly attached to the hospital for duty.

He is responsible for the treatment of all patients. Major surgical operations and special forms of treatment shall not be undertaken without his approval.

He requires prompt information regarding all patients whose condition is unsatisfactory and maintains lists of those in a serious or critical condition. Within the continental limits he keeps the next of kin, or others who may have proper interest, fully advised regarding patients in a critical condition. Outside the continental limits he dispatches this information to the Commandant of the Marine Corps or the Bureau of Personnel, as appropriate, to be passed along to the next of kin of patient or to other interested persons.

He assigns junior staff officers and hospital corpsmen, and provides a plan for rotation of duty to provide professional experience for such personnel. He holds periodic conferences to discuss professional and administrative subjects. He holds regularly scheduled inspections, taking whatever safety precautions are necessary,

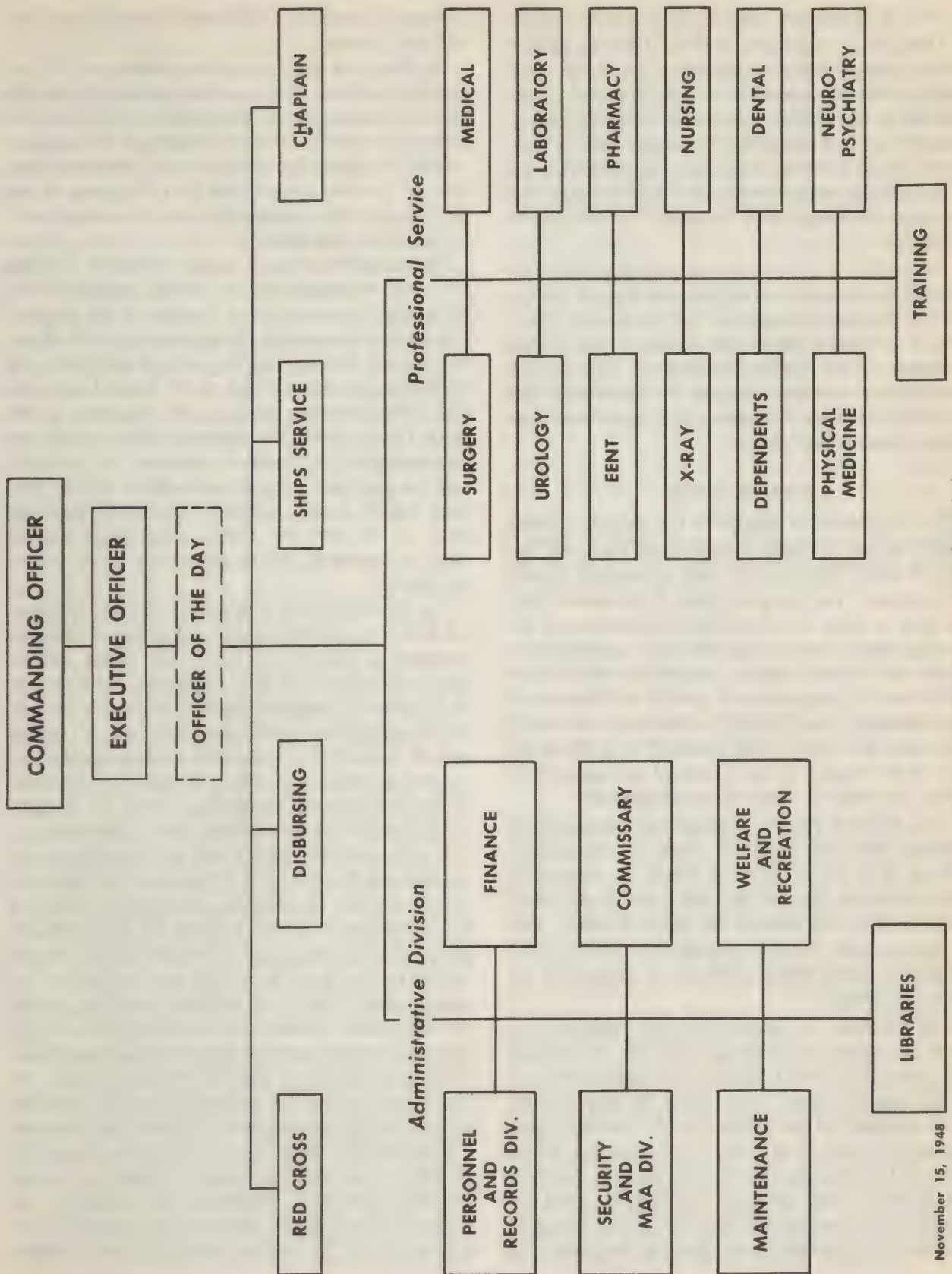


Figure 3. Organization of a Naval Hospital

November 15, 1948

as well as weekly fire drills or other necessary drills.

These are the highlights of some of the top medical officer's responsibilities. A complete list of the chief medical officer's responsibilities can be found in the *Manual of the Medical Department*. Although the responsibility and authority for discharging most of these duties are, of necessity, delegated to subordinates, there is one task that cannot be delegated. He must personally assign punishment or order Summary Courts Martial or Deck Court.

Responsible to whom.—The commanding officer of a hospital is responsible to the Surgeon General for the efficient business management and professional direction of the hospital. He is held accountable for military functions to the district commandant. Through the commandant all hospital functions are coordinated. He is guided by *Navy Regulations* and instructions governing commanding officers.

EXECUTIVE OFFICER

How appointed or assigned.—The Surgeon General nominates and recommends medical officers to the Bureau of Naval Personnel for duty as executive officers.

Functions.—The executive officer is the medical officer next in rank, and the direct representative of the medical officer commanding. He is the immediate superior of the other officers attached to the hospital. The chiefs of the professional services and administrative divisions report directly to the executive officer, who keeps his superior fully informed as to the operation of the hospital. In the absence of the commanding officer the executive officer assumes command.

Since military etiquette requires that permission be obtained from the executive officer to communicate directly with the commanding officer, all requests or communications intended for the commanding officer must be forwarded through the executive officer. This is done in order that the commanding officer may be relieved of minor details which can be adjusted by the executive officer.

His functions, in general, embrace supervision of both the details in connection with the maintenance and operation of the hospital in all departments, and of the care of patients. Accordingly, he keeps himself fully informed of the policies of the medical officer commanding, and of all laws, Navy Regulations, orders, rules, and instructions affecting the hospital, issued by the Bureau or other competent authority. He keeps the medical officer commanding fully advised concerning all matters of importance upon which he has acted. He

endeavors to maintain a high level of morale among the staff and patients.

He designates the hours when visitors may be received by patients. When patients express a desire for spiritual ministrations, he tries to obtain the services of a chaplain or other clergymen. Patients too ill to express a desire for spiritual ministration, will, whenever practical, be provided ministrations by a clergyman of the patient's faith. He is responsible, also, for arrangements for the care of the dead.

The executive officer is charged with the development and maintenance of an efficient organization of all services, departments, and facilities of the hospital. It is his duty to supervise the assignments of all officers and enlisted personnel of the hospital staff and civil employees. The senior officer of the Nurse Corps submits recommendations relative to the assignment of the Nurse Corps officers. The personnel officer handles the assignments of the enlisted personnel and civilians with the approval of the executive officer. He also provides bulletin boards, located in suitable places, where copies of all orders and notices issued by the medical officer in command, and all general and special orders are posted.

The executive officer is responsible for (a) suppressing disorders, correcting abuses, and taking all measures necessary to maintain discipline; (b) seeing that all infractions of law or of Navy regulations, and violations of discipline are promptly reported to the medical officer in command for appropriate action; and (c) seeing that all instances of commendable conduct exhibited by the staff or patients, as well as the names of members of the staff showing outstanding ability, are brought to the attention of the medical officer commanding.

It is the executive officer's duty to make all necessary arrangements for the safety of personnel and property, and to organize an adequate police system, including a master-at-arms detail and a station bill for the Marine guard. If no Marine guard is attached to the hospital and the hospital is not a unit of a naval reservation, the master-at-arms force is so organized that the grounds are adequately guarded. Court-martial prisoners are guarded, whenever practical, by the Marine detachment, or by a special guard detailed for that purpose. An armed guard of hospital corpsmen is not be organized unless it is otherwise impossible to guard such prisoners.

The executive officer (a) supervises the preparation of liberty lists and the issue of passes to enlisted personnel and civil employees, and prescribes the method of checking the departure and return of those granted liberty; (b) makes recommendations concern-

ing leave requests to the medical officer commanding; (c) receives all requests of officers to be absent from duty for short periods or for morning quarters, acting on such requests in the manner prescribed by the medical officer in command; and (d) provides for daily mustering of staff and patient personnel, reporting unauthorized absences to the medical officer in command.

The executive officer is charged with supervising arrangements for recreation, entertainment, and athletics, and with providing opportunities to attend divine services for those attached to the hospital.

He promulgates traffic regulations and provides safeguards for property and personnel. The absence of proper safety devices shall be reported to the medical officer commanding. He is charged with responsibility for the installation and employment of such devices. He maintains an up-to-date fire bill, providing for all requirements listed in the *Manual of the Medical Department*, and prescribes the times at which the weekly fire drill shall be held, taking charge of all such drills and fire-fighting operations.

If no disbursing officer is attached to the hospital, the executive officer arranges for safekeeping of moneys and valuables belonging to patients in such manner as the medical officer commanding may direct.

The executive officer arranges for safe custody of all hospital keys, and requires compliance with instructions concerning the receipt, custody, and issue of alcohol, narcotics, and poisons as listed in the *Manual of the Medical Department*.

The executive officer provides for all inspections, conducting or designating an officer to conduct, such of these inspections as the medical officer in command may direct. The material inspections shall be planned to comply with the requirements of the *Manual of the Medical Department*. On such days as the medical officer in command does not inspect the building and grounds, the executive officer inspects them or arranges for their inspection. He immediately reports to the medical officer in command any unsatisfactory condition found.

In addition to the provisions for inspections required by the *Manual of the Medical Department*, the executive officer makes arrangements so that the officer of the day inspects all meals. At such time as he may elect, the executive officer partakes of the meals served to determine that food is properly prepared, of good quality, and sufficient in quantity. He frequently inspects special diets, their preparation and service; verifies their adherence to diet prescriptions; and assures himself that

they are appetizing, yet prepared with due regard for economy.

The executive officer observes officer personnel to determine their efficiency in performance of duty and compliance with regulations; and inspects, or has inspected, the clothing and outfits of all enlisted personnel, assuring himself that such personnel have the required clothing and that uniforms are in good condition and comply with regulations. He inspects, or requires another to inspect, each day, the condition of persons in the brig.

Obviously the executive officer cannot personally supervise, or carry out, all of the foregoing professional responsibilities himself. He actually holds the chiefs of the various services (and others when necessary) responsible to him for carrying out the policy of the hospital. He makes the over-all plan and sees that it is carried out. He is kept fully informed at the daily meeting of the chiefs of the services of the progress being made; of the status of patients, particularly of those in serious or critical conditions; and of the adequacy of facilities for the proper care of patients, etc. At large naval hospitals an administrative officer is appointed to assist with managerial details.

OFFICER OF THE DAY

Assignment.—Members of the medical staff of a naval hospital are assigned officer-of-the-day duty by the executive officer. When duty lists are published, duty officers are not permitted to deviate from their assigned watches without the express permission of the executive officer.

Eligibility for duty.—Officers of the grade of commander or above are usually assigned senior watch officer duties. Those of the grade of lieutenant commander, and below are assigned junior officer of the day duties. Interns are not eligible for such duty, but may assist the officer of the day in executing his extensive responsibilities.

Period of duty.—The tour of duty for the officer of the day consists of 24 hours, beginning at 1000. He must remain on the hospital reservation at all times, leaving only when properly relieved.

Functions and responsibilities.—In the absence of the commanding officer and executive officer, the officer of the day is charged with the efficient management of the hospital.

In making decisions that may belong to those in higher authority, he should feel free at any time to request advice from the medical officer in command or the executive officer, or in their absence, from the senior watch officer, or other senior officers available.

In delicate situations arising from deaths or critical illnesses, the officer of the day should never discuss the illness or death of a patient with next of kin in semi-public offices. There should be a special room for such purpose; but if none is available he should take the visitors to any quiet room where discussion may be held in private. Discussion of legal rights and benefits and death gratuity with next of kin should be avoided after regular office hours, if possible, thus avoiding errors and misunderstandings that might arise owing to the lack of knowledge of numerous laws covering the various categories of patients. During regular office hours these matters are handled by the personnel officer.

In the hospital regulations and orders there are instructions relative to the preparation of messages to the next of kin, notifying them of the serious condition or death of a relative who is a patient at the hospital. It is the responsibility of the officer of the day to acquaint himself with these instructions and to be certain before he signs the messages that they have been checked and cross-checked for the accuracy of every item, and he must be satisfied they are 100 percent accurate before releasing them.

In granting emergency leave or extension of leave for staff and patients, the officer of the day should follow a rule of granting no emergency leave or extension of leave, except in extreme emergency situations.

Duties.—Some principal duties of an officer of the day are:

1. Maintain order and discipline.
2. Record in accident book, nature of injuries and treatment of all accident cases.
3. Inspect all meals served as to quality and quantity.
4. Check the brig at regular intervals.
5. Make a final inspection of all cadavers. If the condition of the body is found satisfactory, he should so state in writing. The clothing of the corpse and the casket should likewise be inspected before allowing them to be removed from the hospital reservation. All questions involving any doubt are referred to the commanding officer or executive officer.
6. Make an afternoon inspection of wards, kitchens, mess halls and grounds.
7. Check the building after lights are out to see that it is secured.

Sick Calls.—On regular working days, the officer of the day makes evening sick calls throughout the hospital. On Sundays and holidays, in the absence of the regular ward medical officer, he makes both the morning and evening sick calls.

He should personally answer calls for a medical officer

from any ward in the hospital, or outlying units, after office hours or during his immediate tour of duty.

Log.—A very important day-by-day task of the officer of the day is to keep a complete, succinct, and accurate record in the *hospital log book* of all important events that occur during his tour of duty, including all entries required by the medical officer in command. Failure to maintain the log book properly may result in considerable trouble, not only to himself, but also to the hospital.

Some important items for entry into the daily journal, include:

1. All inspections.
2. Quality and quantity of food served at meals.
3. Special ambulance trips.
4. Summary of patients received and discharged.
5. Fires and fire drills.
6. Arrival and departure of personnel on leave.
7. Personnel reporting for duty or being detached.
8. Personnel absent without leave or over leave.
9. Confinement and release of offenders.
10. Meetings of all courts and boards.
11. Deaths.
12. Any event the recording of which may be valuable for future reference.

Any entries made by another officer temporarily relieving the officer of the day shall be signed by the officer making such entries.

Admission of patients is one of the most important duties of the officer of the day. He is held accountable to the commanding officer for carrying out these functions in accordance with local policy. The officer of the day checks the diagnosis on admission, assures himself that the patient is assigned to the proper ward, and receives such treatment as may be necessary. In all cases where the patient appears exceptionally ill, the senior watch officer and the chief of the service should be notified immediately. This is especially necessary after working hours, when the ward medical officer is not present to take charge.

Admission room.—When a patient first arrives at a naval hospital for treatment, he is registered. After verification that he is entitled to hospitalization, he is channeled to the appropriate ward indicated by the diagnosis on his hospital ticket. His baggage is correctly sealed, tagged, and stored. His admission records are prepared and routed to the appropriate office for safe-keeping. In most naval hospitals, these important functions are performed in a separate space known as the "admission room."

Speedy, efficient performance of these tasks by a friendly hospital staff will create a favorable impression

on the patient that will be reflected in his clinical progress. This vital, psychological function of the admission unit is just as important as its routine administrative duties.

Since an admission unit is not always an essential unit in the organization of a hospital, it is not shown on the organization chart of the typical naval hospital. During peacetime, especially in small hospitals, admissions are often handled directly by the office of the officer of the day. But in wartime, with an increased volume of admissions, patients are admitted through a well-organized admission room of sufficient size and staff to handle an estimated peak load.

In continental hospitals the admission room is divided into two distinct parts—one space for male patients and another for female patients. Many hospitals in peacetime also have a separate unit or a desk that handles Veterans' Administration patients.

To minimize the actual physical handling of patients, the admission unit should be accessibly located in the main hospital building or immediately adjacent to it, and should be easily reached by all roads within the hospital compound. The "bag room" should be nearby, or better still, directly beneath the admission unit, so that a patient's baggage can be passed to the bag room by a clothes chute.

Adequate space must be provided for admission of patients, including an admission room for registry of patients, individual examination rooms, emergency infirmary wards, quarters for the sleep-in watch, and office facilities for medical officers on duty.

The admission unit should be completely equipped to handle any possible type of emergency. In general, the equipment should include a shock room, a fully supplied medicine locker, an emergency bag, stretchers, wheel stretchers, and various types of beds. When necessary, the medical officer should start the patient's treatment or medication upon admission, writing out directions for the treatment and the care to be followed when the patient is taken to a ward.

Although the admission room staff is under the immediate supervision of the medical officer on duty, it is administratively responsible to the personnel officer. Personnel assigned to professional duties as assistants are answerable to the duty officer. Since the accuracy of a patient's hospital records depend, to a great extent, upon the reliability of information obtained when he is admitted, only well-qualified people should be assigned to the admission unit. Generally, the staff for this activity should consist of a chief hospital corpsman and hospital corpsman assistants.

Admission card.—Most hospitals obtain essential information concerning a patient at the time of his admission and disseminate such data to cognizant activities by either a local admission card which is supplemented by various memoranda in multiple copies, or by a "muster" file card. This highly essential information enables the staff to make proper and speedy assignment of a patient to a ward, and provides the basis for all subsequent pertinent forms, reports, records, and card indexes.

Since the exact procedure for recording such data is left to the discretion of the commanding officer, no effort will be made to describe the different forms and procedures now being used at various naval hospitals. For instructional purposes, however, a sample admission card is reproduced here. Although this sample card does not have official approval, study of its makeup and the information required to complete it, will reveal the highly important role played by administrative procedures in an efficiently managed admission unit.

Security of patient's baggage.—A complete and accurate record of a patient's gear requires that forms NAVMED-G (Hospital Ticket) and NAVMED-416 (Hospital Ticket - Women) should be examined, and the patient's clothing and effects check against the lists on the front of the form. However, this procedure (physical inventory) has proved to be impractical under emergency conditions. In numerous instances, the hospital ticket is received with the marking "not inventoried" on the face of the form. In other cases, the patient is admitted before the personal effects are received. Thus, valuable time is spent by the duty officer or the record clerk in listing or checking unimportant personal belongings.

This checking of personal effects is designed to protect the patient; the personnel officer, who is accountable for personal effects in the bag room; and the Government against claims for lost or missing articles.

To insure the security of personal effects, the activity handling a patient's gear may seal his personal effects and post the number of the seal on the hospital ticket. Thereafter, each time the baggage is opened during the patient's hospitalization, a new seal is applied and recorded.

Work measurement and staff requirement.—Ordinarily, most patients reporting for hospitalization can be assigned to a ward for treatment within 15 to 20 minutes, if their diagnosis has been properly determined at the duty station. Allowing for considerable variation in the method of preparing admission cards, of tagging and sealing baggage, and of making necessary entries

MEDICAL DEPARTMENT ORIENTATION

in the register and log, the following staff should be adequate for admission units:

Number of Daily Admissions	Staff Required
15-20.....	4 (including HMC).
20-40.....	5 (including HMC).

This proposed staff is based on a 24-hour day working schedule, 7 days a week, with personnel standing the usual port, starboard, and night watches.

In addition to enlisted personnel, the admission service should be staffed with a sufficient number of qualified junior medical officers to handle the normal flow of patients, and with enough stand-bys to take care of the estimated peak load.

A duty officer assigned to an admission unit should be careful to observe the following rules when admitting patients to a naval hospital. He should:

1. Make every effort to determine the disciplinary status of each patient by examining his service record

and by questioning the medical representative in charge of the patient being admitted. If a patient is found to be in disciplinary status, the officer of the day and other interested officials should be notified so that hospital orders concerning the case can be carried out.

2. Be certain that all necessary information concerning the patient is recorded on the Kardex file card and that such data are distributed promptly.

3. Where the patient's condition warrants such action, place him immediately on the serious or critical list.

4. Comply with hospital orders in handling valuables.

5. See that adequate facilities and areas are kept clear for the unloading of patients from ambulances.

6. Keep emergency bags ready for instant use in making ambulance calls.

7. Keep the officer of the day informed of any unusual happenings related to the admission of a patient.

1.	NAME (a)				WARD				ADMISSION CARD			
	(b) (LAST)				(c) (FIRST)				(d) (MIDDLE)			
2.	RESERVE OR FILE NO.				RANK, RATE OR CLASSIFICATION				U. S. NAVAL HOSPITAL (e)			
3.	ADMISSION (f)		STATUS (CHECK) (g)		ACTIVE RET. ACT.		RETIRED INACTIVE		RELIGION (h)		RACE (i)	
	(DATE)		(TIME)								BLOOD TYPE (j)	
											RECEIVED FROM (k)	
											HOSP. REG. NO. (l)	
4.	EPTG (m)		IF PREVIOUSLY ADMITTED, GIVE DATE (n)		PLACE OF FIRST ENLISTMENT (o)				DATE OF FIRST ENLISTMENT (p)		SEPARATION OF PRESENT ENLISTMENT (q)	
											KEY LETTER (r)	
											SPECIALTY LETTER (s)	
											SICK DAYS (t)	
5.	DIAGNOSIS NO. AND TITLE (u)				CIRCUMSTANCES OF OCCURRENCE							
					1. (v)				2.			
					3.				4.			
6.	AVIATION STATUS (w)		SEX (x)		MARITAL STATUS (y)		BIRTHPLACE (STATE) (z)		DATE OF BIRTH (aa)		LEGAL RESIDENCE AND LENGTH OF TIME (bb)	
											(YEARS) (MO.)	
7.	MAIDEN NAME OF MOTHER (cc)				BIRTHPLACE (dd)				NAME OF FATHER (ee)			
									BIRTHPLACE (ff)			
8.	NAME AND ADDRESS OF NEXT OF KIN (gg)				RELATIONSHIP (hh)				NEAREST PHONE (ii)			
									GOVERNMENT INSURANCE (jj) YES NO			
9.	NAME AND ADDRESS OF BENEFICIARY (kk)				STATE HOW PATIENT ARRIVED (BY PRIV. AIR, MIL. VEHICLE, ETC.) (ll)				WAS ACTIVITY NOTIFIED? (mm) YES (nn) NO			
									DISCIPLINARY STATUS LTR. (nn) YES NO			
10.	INDICATE TYPE (ADL, AWOL, SCH, GCM, ETC.) (oo)		RECORDS REC'D. (CHECK) REQUESTED (DATE)		HR PA		CSC SR		FORM G ORDERS (OTHERS)		AUTHORITY FOR ADMISSION (OTHERS) (qq)	
11.	OFFICER'S PAY A/C CARRIED WHERE (rr)		DISPOSITION, DATE, AND AUTHORITY (ss)		RECORDS FORWARDED (CHECK) (tt)		HR PA		CSC SR		FORM G ORDERS (OTHERS)	
12.	REMARKS (uu)											
13.	NAME (vv)				SERVICE OR FILE NO. (ww)				RANK, RATE OR CLASSIFICATION (xx)			
									WARD NO. (yy)			
	BINDING EDGE											

Original and six copies to be completed at Admission Desk.

DISTRIBUTION:

1. WARD (White)
2. INFORMATION DESK (Light Blue)
3. RECORD OFFICE (Green)
4. RECORD OFFICE (Salmon)
5. RECORD OFFICE (Buff)
6. MAIL ROOM (Pink)
7. ADMISSIONS (Yellow)

(Individual snap-out carbons will be used for this form; the copies will be on thin tough paper stock to enable typing in one operation)

(BACK OF FORM—Ward Copy ONLY)									
CHECK OUT									
WARD M. O.	BAG ROOM	LIBRARY	MAIL ROOM	PAY OFFICE	RECORDS OFFICE	V.A.P. DESK	AGENT CASHIER	O.O.O.	(TIME)

Figure 4. Sample Admission Card

8. Make a careful record of examinations; namely, for intoxication or for those seeking admission as patients who are found to be malingering. The latter group sometimes try to justify AOL status by time spent in the hospital. Prepare a *written report* giving the *exact time* and the *findings of his examination*.

In order to avoid errors in the hospital census report, all patients should be routed through the admission office, including staff members. If this procedure should prove to be impractical or impossible, the officer who places the patient on the sick list must assume the responsibility for calling the admission office and having a hospital corpsman from that unit make out the proper forms.

Upon completion of his tour of duty, and when properly relieved, the officer of the day signs the journal and submits it to the medical officer in command for his approval.

NAVAL HOSPITAL ANCILLARY OFFICES

THE CHAPLAIN

The Bureau of Naval Personnel assigns one or more chaplains to duty at a large naval hospital to care for the religious needs of all the patients. The senior chaplain, under the direction of the executive officer, is responsible for the supervision of other chaplains attached to the hospital. But the executive officer should provide every facility necessary for the functions of the chaplains.

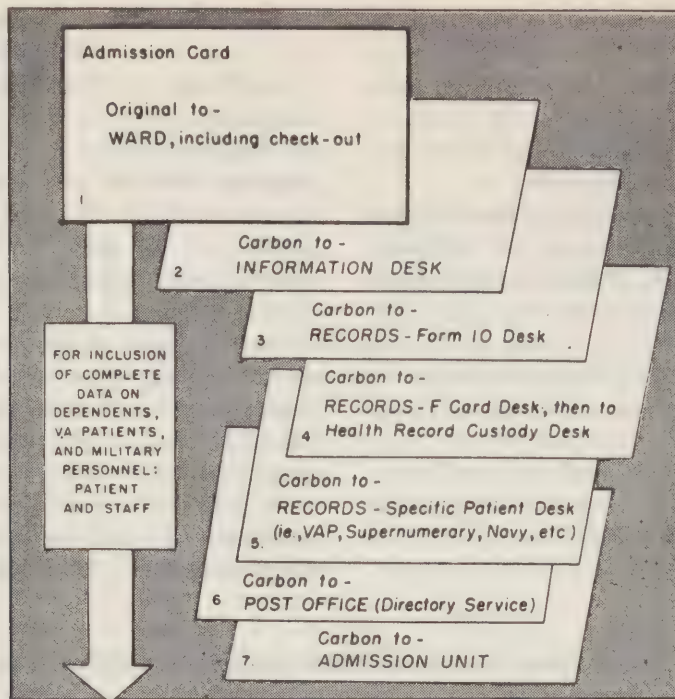
The chaplain is adviser to the commanding officer in matters relating to the moral and religious life of the command, and in all cases, the activities of the chaplain are subject to his approval. Chaplains serve both the hospital patients and the members of the hospital staff.

All information of interest to the chaplains should be distributed each morning to the senior chaplain's office. The data is usually forwarded on a mimeographed sheet

A KEY TO THE USE OF THE PROPOSED ADMISSION CARD

(Each rainbow copy will include the printed destination of the particular copy)

Lines 1 and 2 (a), (b), (c)	Post individual identification data and information for "F" card.
Line 2(d)	Insert number of assigned ward.
Line 2(e)	Insert location of the particular hospital.
Line 3(f), (i), (k)	Post information for "F" card.
Line 3(g)	Post information which furnishes specific data for Ration Record, NAVMED-HF-36.
Line 3(h)	Enter information for Form 10 (chaplain's office), in case of serious or critical list, or death.
Line 3(j)	Insert information for possible blood transfusion while on ward.
Line 3(l)	Insert hospital register number as additional identifying item which will appear on all hospital forms for this particular patient.
Line 4(m)	Enter "Yes" or "No" for "F" card ("EPTE" stands for Existing Prior to Entry).
Line 4(n)	Post information for "F" card.
Line 4(o), (p), (q), (r), (s), (t)	Enter information for record office activities, "F" card and Bureau of Naval Personnel data.
Line 5(u), (v)	Post information for "F" card.
Line 6(w), (z), (aa)	Post information for "F" card.
Line 6(x), (y)	Insert information for possible social service.
Line 6(bb)	Post information to prove eligibility for State benefits (political).
Line 7(cc), (dd), (ee), (ff)	Enter information needed to complete record.
Line 8(gg), (hh), (ii)	Enter information needed in case of serious or critical list, or death.
Line 8(jj) and Line 9(kk)	Post information necessary on Veterans' Administration patients, especially.
Line 9(ll)	Insert information necessary in case of damage suits, compensation due from Veterans' Administration, private ambulance service, etc.
Line 9(mm)	Insert information necessary in case of servicemen emergency cases.
Line 10(pp)	Provides a permanent record of official documents received (indicate with check), and proof of eligibility for admission unit. Indicate request for records by noting the date in the appropriate box.
Line 9(nn) and Line 10(oo)	Provides permanent record of vital information regarding disciplinary action cases.



ADVANTAGES

1. Gives complete information on form.
2. Can be utilized as ward muster card and as separate patient check-out form.
3. Serves as personnel muster card, and supplementary card files and forms.
4. Gives complete information for daily personnel report, Form 10.

Figure 5. Distribution of Sample Admission Card

showing all changes in patient personnel that have occurred since the previous day, giving the name and unit of new admissions, the ward to which sent, and religious preference. Deaths, discharges, and transfers to other wards are also indicated. Thus the chaplains are able to keep in close touch with the various patients.

The personal services rendered by the chaplains are many, ranging from cheering a despondent patient to checking on pay accounts. In this work, of course, the chaplains closely coordinate their social welfare activities with those of the American Red Cross and the Navy Relief Society. In rendering these personal services the chaplain cooperates with the ward doctor and nurses in the interest of the patients.

The senior chaplain arranges Sunday services for the several faiths represented in the hospital. Communion is made available to bed patients who desire it.

When the recovery of a patient is in doubt, a chaplain is advised by the hospital office. In extreme cases the ward nurse contacts the chaplain directly. Before leaving

a hospital the chaplain should indicate where he can be reached at all times. Last rites are performed by one of the chaplains.

In case of a patient's death, the chaplain is well qualified to assist in consoling relatives of the deceased. Also, under certain circumstances, it may become the duty of the chaplain to transmit personally such information to the family. He may, thereafter, be of assistance in planning the funeral. He is expected to be familiar with the military procedure applicable under such circumstances.

A complete explanation of the duties of chaplains may be found in Section 2500 of the *Chaplain's Manual*. This summary of their duties touches only on those having a direct bearing on the clinical course of the sick and wounded. There is no need here to point out the great value of this service. It is an exceedingly important element in hospital work, and in certain cases religious assistance is probably of as great value as that of any other service offered in a naval hospital.

AMERICAN RED CROSS

The functions of the American Red Cross is to furnish volunteer aid to the sick and wounded of the armed services in time of war, in accordance with the spirit and conditions of the Conference of Geneva of October 1863, and of the Treaty of Geneva, of August 22, 1864, to which the United States agreed to adhere on March 1, 1882.

The American Red Cross acts in matters of voluntary relief and in accord with the military authorities as a medium of communication between the people of the United States and their armed services. It also acts in such matters between similar national societies of other governments and United States Government agencies through the *Comite Internationale de Secours*.

Whenever in times of emergencies, the President shall find the cooperation and use of the American National Red Cross with the land and naval forces necessary, he is authorized to accept the assistance tendered by the Red Cross and to employ the organization under the land and naval forces in conformity with such rules and regulations as he may prescribe.

In time of peace or of war, the American Red Cross is authorized to provide the following services to naval and Marine Corps personnel:

1. Consultation and guidance with regard to personal and family problems.
2. Assistance in communications between naval and Marine Corps personnel and their families and in inquiries concerning their location and welfare.
3. Financial assistance by loan or grant under certain emergency conditions.
4. Investigation of home conditions at the request of commanding officers for confidential information needed in considering discharge, relief from active duty, and leave. Similar services will be rendered in matters pertaining to allotments and allowances and the civil rights of personnel and their dependents.
5. Assistance to patients in adjustment of social, economic, and family problems which may threaten to retard their recovery.
6. Upon request of medical officers, the acquisition of social histories, including medical data, to be used as an aid in determining diagnosis, treatment, and ultimate military disposition of cases.
7. Comfort articles for those patients who are temporarily without funds or to whom these articles are not accessible.
8. Medically approved individual or group recreation for bed patients and convalescents.

9. The friendly services of trained volunteers.

10. Assist in surveillance of the comfort and care of relatives who visit patients, particularly those who are summoned because of serious illness.

11. When authorized by the medical officer in command of a naval hospital, communication with families of patients who are listed as seriously or critically ill, supplementing the notification already sent by hospital authorities to the next of kin with a letter giving such details regarding the patient's condition and personal situation as may be approved by hospital authorities. Follow-up letters may be sent at suitable intervals.

12. Communicates by letter with families of men who die in hospitals, following the official message of notification of the death. These letters shall contain only such additional information as may, in the opinion of the medical officers, be advisable.

13. Information concerning federal or state benefits available to discharged disabled service men and to dependents of deceased men.

14. Forms to assist in preparing and forwarding applications for pensions, as may be requested.

Suitable office space is furnished by the commanding officer of the activity to which Red Cross personnel are assigned.

The American National Red Cross is the only volunteer society authorized by the Government to render medical aid to the armed forces of the United States.

THE DISBURSING OFFICER

The Disbursing Officer in a naval hospital is an officer of the Supply Corps. He is responsible for the proper functioning of the disbursing office. He pays the salaries and wages of service and civilian personnel attached to the hospital, as well as for materials. In other words, he is the disbursing agent for the hospital. He maintains records, pay accounts, etc., as outlined in *Navy Regulations*, and *Bureau of Supplies and Accounts Manual*.

The small stores and ship's service stores are under the jurisdiction of the supply corps officer. In small hospitals, the disbursing officer probably will be found to have both the small store and ship's service store departments as collateral duties.

LIBRARIES

Each hospital maintains a professional library for the use of Medical Corps, Medical Service Corps, Dental Corps, Nurse Corps officers, and a recreational library for the use of all hands. These libraries should be conveniently located, and have adequate physical facilities.

Both the recreational and the professional libraries should be located adjacent to each other, or at least in the same immediate area.

Professional librarians, if available, are to be utilized to perform technical library work, and to service authorized personnel. Enlisted personnel, including chiefs, can provide this service if librarians are not available. One professional librarian can direct the activities of both libraries if they are located adjacent to each other or in the same immediate area. The staffs may then be interchangeable, the problem of adequate personnel coverage will be less difficult, and work on large projects such as inventories, will be facilitated.

A very rigid loan policy should be established to reduce the number of books lost. Every book, including those on the various services that sometimes are on an indefinite loan basis, should be charged to a specific officer, and if they are not returned, appropriate action should be initiated to insure reimbursement or replacement of the lost hospital property.

PUBLIC RELATIONS OFFICER

Since there are almost as many definitions of public relations as there are people who work in the field, it is not an easy matter to define the functions of a public relations officer in a naval hospital. In general, however, he seeks to build and maintain good relations between an institution and its public. It is his duty to devise ways and means of translating the policies and actions of the hospital into intelligible terms that will serve to create in the public an attitude of confidence and understanding toward an institution and its work, rather than one of apathy or even hostility. By subjecting every phase of hospital administration to a microscopic eye, an alert public relations officer can detect the first symptoms of trouble, make an accurate diagnosis of the problem, and prescribe an effective remedy.

Public relations, broadly interpreted, includes all the relationships of the hospital with the public. It is, therefore, an area in which the commanding officer must exercise personal and direct responsibility. The extent to which he can safely delegate responsibility to staff members is definitely limited. For that reason most activities of the public relations office are subject to the final approval of the commanding officer. Like all other staff activities, the public relations activity requires a thorough understanding of departmental policy as set forth in *Navy Regulations*, and Navy orders and directives.

Under the direction of the commanding officer, the

public relations officer is responsible for the dissemination of information concerning the hospital, its staff, and its program to news-gathering agencies, radio stations, film producers, and other public and private organizations in the publicity field. He also supervises contacts with these agencies and assists outside writers by gathering material and arranging interviews within and outside the hospital.

Ordinarily a public relations officer with sound judgment, imagination, ability to get along with people, and a knowledge of the hospital and its program will be of more value to the commanding officer than one who is chiefly a newspaperman thinking in terms of the amount of newspaper space and printed matter he can produce.

To achieve the objective of a well-informed public, the officer responsible for public relations must make use of all ethical media for disseminating information about a hospital. Three avenues of approach to the achievement of this objective are: the spoken word, the printed word, and visual methods.

Spoken word.—Most public relations officers are likely to regard the more obvious instruments of their trade, such as speeches and radio broadcasts, as the principal methods of reaching the public through the spoken word. Certainly both are important ways to form public opinion. Actually, however, the two most effective channels of communication are a vital part of the hospital organization itself. Satisfied patients and well-informed professional and administrative employees, who can explain the objectives of the institution and their own part in achieving them to patients and visitors, are infinitely more important than any other means of public education. Staff members should be taught the basic facts concerning the hospital and its work so that a true picture of the institution will be presented at all times.

Written word.—Hospitals for many years have distributed a great amount of printed material to the general public, but unfortunately much of this literature has been in the form of long, formal, statistical reports with little reader appeal. One of the main tasks of the public relations officer is to see that news-gathering organizations are supplied with interesting, timely, and accurate information in an acceptable form. In addition to possessing a good knowledge of the hospital organization, the public relations officer should have a highly developed news sense and should know the proper makeup of a news article. It is equally important, that he knows what information to give out and what information to withhold, since medical ethics require that doctor-patient relationship be regarded as confi-

dential. All information intended for the public should emanate from his office.

A house organ is one of the most effective means of building and maintaining good will among staff members and of keeping patient morale at a high level.

The individual medical officer also has at his command another effective means for creating good will. This is the preparation of correspondence for the next of kin regarding the condition of patients at the hospital. Speed in answering such letters by the commanding officer is essential, if the public attitude toward the institution is to remain friendly. Letters which are well-phrased and courteous, rather than ambiguous and evasive, will be lasting emissaries of good will.

Visual presentation.—Visual means of educating the public concerning the work of a naval hospital will be confined largely to conducting tours through the institution and to providing photographic material for exhibits, and in some cases, background data for film production. Usually, visits of professional groups and important officials will be handled by the office of the commanding officer. The public relations officer, however, will be responsible for arranging and supervising visits of stage and radio personalities who want to entertain patients. These visitors should be treated with the utmost courtesy and consideration. For security reasons, they should also be cautioned by the public relations officer regarding any remarks made afterwards as to the work of the hospital.

PROFESSIONAL SERVICES

For purposes of administration and in the interest of professional efficiency, the commanding officer of each naval hospital organizes the professional and other activities of his hospital into services and prescribes the number and the line of control over them and their relationship to each other. There are two types of hospital services—professional and administrative. The personnel and activities that follow properly belong in the professional service.

CHIEFS OF SERVICES

Assignments.—The commanding officer assigns the senior officer of each professional service as chief of that particular service, such as the Chief of Medical Service, Chief of Dental Service, etc. Chiefs of services are responsible to the commanding officer for the discharge of their professional and administrative duties and must carry out all of the orders, directives, and policies of the command.

Functions.—Some of the specific functions of the chiefs of services are:

1. To answer any questions concerning their service.
2. To keep the commanding officer informed of all cases on the serious or critical lists and of any unusual happenings within their service.
3. To make a daily inspection of their service that is concerned with the professional care of the patients as well as with the military organization, and to suggest how a ward officer may more fully carry out the policy of the commanding officer.
4. To formulate, within the limits set by the commanding officer, the over-all policies of their services concerned with leave, liberty of patients, duty parties, medical surveys, and medical histories.
5. To supervise the wards and clinical facilities, including such units as the operating and accessory treatment rooms of the particular service, and the facilities for keeping records.
6. To issue necessary instructions to Nurse Corps officers and hospital corpsmen regarding procedures and techniques.
7. To train assistants and others assigned for the instruction of hospital personnel.

Training.—A secondary mission of a naval hospital is to instruct Medical Corps personnel in their professional duties. The chiefs of services prepare the curriculum and submit it, together with the names of those required to take the courses or training, to the executive officer for approval. They also see that clinical material and other facilities are made available to instruct and indoctrinate junior officers and hospital corpsmen.

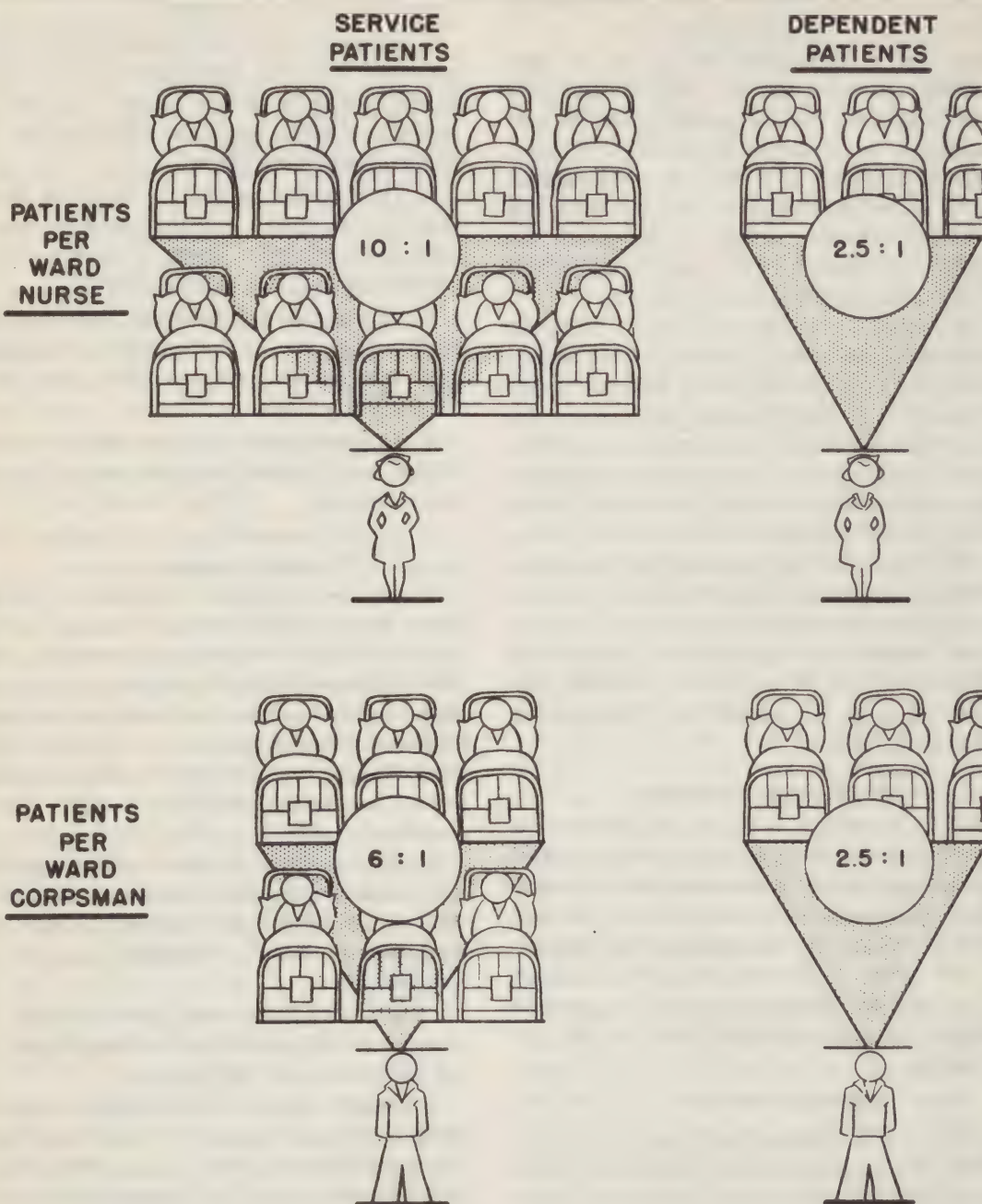
Staffing of the professional services.—The following represents the personnel customarily assigned to a professional service in a naval hospital, though considerable variation is allowed, depending upon a particular situation.

Medical officers.—Any naval hospital having a capacity of 500 patients or over should have one medical officer for every 25 patients.

Dental officers.—Routine dental services in a 2,000-bed hospital should be staffed with eight dental officers, one for each 250 patients. Whenever the hospital requires special dental services, this number should be increased in proportion to the need.

Nurse Corps officers.—The ratio of nurses to patients in naval hospitals should be 1 Nurse Corps officer for every 10 service patients, and 1 Nurse Corps officer per 2½ dependent patients. In a 2,000-bed hospital the staff of nurses should number about 265.

NURSING REQUIREMENTS



Drawn by MEDICAL STATISTICS DIVISION

Figure 6.

Corpsmen.—The ratio of the ward corpsmen to service patients should be 1:6, and of corpsmen to dependent patients, 1:2½.

Ward administration.—The importance of expert care to be provided by professionally trained pupils was stressed by Hippocrates in his advice to physicians: "Let one of your pupils," he said, "be left in charge, to carry out instructions without unpleasantness, and to administer treatment. . . . Never put a layman in charge of anything, otherwise if a mischance occurs the blame will fall on you." Even though there were no nurses then as we know them today, the implication of Hippocrates' instructions is quite clear. He placed the mission of caring for the sick and injured on the highest level, assigning the ultimate responsibility directly to the medical officer in charge.

Hippocrates' directions are particularly pertinent to modern hospital administration. Because of their professional nature and direct concern with the well-being of the patient, certain hospital activities must always remain the responsibility of the medical officer. Ward administration is in this category. While it is the duty of the ward nurse to supervise details of ward activities to be carried out by the hospital corpsmen, accountability for the performance of such duties must always rest with the ward medical officer, who in turn answers to the chief of the particular service. In small hospitals, the ward medical officer may also be the chief of the service.

A standard of highest morale and efficient ward administration is essential to the well-being of the patient. The degree of success achieved in this respect is reflected by the organizing ability of the ward medical officer.

Some of the more important functions of a ward medical officer are:

1. Definition of general policy to be followed on the ward.
2. Supervision of the care and treatment of sick within the ward.
3. Supervision of administration and discipline of the ward.
4. Coordination of ward activities with other divisions of the hospital.
5. Supervision of maintenance of all ward books, records, reports, and forms.
6. General supervision of bedside care.

The ward medical officer is directly responsible for the administration of the ward. Therefore, it is his responsibility to make clear the policy to be followed and see to its execution. Nurse Corps officers should be given a clear outline of their duties and provided the

necessary support by the ward medical officer to effect those assigned responsibilities.

The ward medical officer is responsible at all times for keeping the chief of professional service fully advised regarding the condition of all patients under his care. Should any unusual change be necessary in the clinical record of a patient, such change should be reported immediately, and adjusted records should be forwarded to the records office promptly. The chief of the professional service should be furnished with any necessary special information concerning patients on the serious or critical lists. Any unusual therapeutic measures should be reported promptly.

Sick call is held early in the day so that work details and routine may go forward.

During sick call, bed patients should have neat, clean beds; ambulant ward patients should stand at attention beside their beds in neat, clean uniforms of the day, lockers should be orderly, and all other evidence of good personal hygiene apparent. This program should be rigidly enforced.

Navy hospitals differ from civil hospitals in that patients must be retained until they are ready to return to full duty. Disciplinary problems are likely to arise from this policy. Full of renewed energy, with time on their hands, these boys require additional supervision and direction. Much of this excess energy can be directed into useful channels through a well-planned rehabilitation program. To some extent this is a responsibility of the ward nurse. When indicated, the ward nurse should recommend occupational therapy or suggest work assignments compatible with the point of recovery of the patient. The ward medical officer approves and signs such recommendations. Work assignments may include assisting with ward details, helping in the diet kitchen, working about the grounds of the hospital, etc. Such work details are assigned during sick call.

Responsibility for coordinating activities with other sections of the hospital rests with the ward medical officer. Bickering and differences should not be tolerated. Maintenance of good relationship with key personnel in other services is essential to good management. Advice from administrative specialists in other divisions can save much time in routine details.

Although not required to personally keep all ward books, records, and forms in order, the ward medical officer is responsible for their proper maintenance. He is also responsible for the proper care and use of all ward property. When being relieved of duty he must verify all property records before releasing them.

One duty which should not be delegated is the handling of unusual requests. These must be investigated and handled personally. Another essential duty is the posting of lists outlining the duties of each hospital corpsman and convalescent patients in emergencies. In the event of fire, it is the duty of the ward medical officer to supervise the removal of the helpless and bed patients from the wards.

Although the ward medical officer is charged with the supervision of bedside care, much of this responsibility is delegated to the ward nurse. It is she who trains and supervises hospital corpsmen in the details of bedside nursing, preparing and maintaining ward records and charts, administering medication, and the numerous other details involved in this phase of ward administration. It is one of the nurse's duties to clearly outline the duties of the corpsmen and make work assignments, posting them in writing, where they can be readily consulted. She must also make liberty lists for patients. That relationship of corpsmen with patients must be kept amicable, as well as their relationships with coworkers. In order to efficiently handle the many phases of ward administration delegated to her, a nurse must be well qualified not only in her profession, but also in instructing those under her supervision. She must be formal in relationships, resourceful in emergencies, and a diplomat.

Having delegated many responsibilities to the ward nurse, the ward medical officer must give her his full support in carrying them out. A nurse should never be overruled in the presence of patients or corpsmen. When she is negligent and in need of formal censure, it should be done in private. When a person under her supervision approaches the ward medical officer for a decision about something under her jurisdiction, the person should be referred back to the nurse. By adhering strictly to this policy and supporting the nurse's decisions, the ward medical officer will find the patients conforming to such decisions, thus leaving him free for his own professional duties.

MEDICAL SERVICE

The wards of the medical service contain patients whose care, generally speaking, is a function of internal medicine. In this division of the hospital such diseases as pneumonia, jaundice, and gastrointestinal disorders are treated.

The service is divided into units composed of patients suffering from the same disease or same type of disease. Each unit may be composed of one or more wards, or have patients scattered about the hospital.

At the U. S. Naval Hospital, Bethesda, for example, allergy and dermatology are distinct, differently organized units within the medical service. The patients of the allergy clinic are scattered throughout the hospital in the wards of pertinent services: asthma to the chest service, skin disorders to dermatology, etc. Dermatology patients on the other hand, are all in one ward. Each medical service is divided according to the type of disease it handles in greatest quantity.

Only specially trained personnel are permitted to operate the Benedict-Roth machine, electrocardiograph, and fluoroscope.

Medical service in naval hospitals is specialized just as it is in civilian hospitals.

The size of individual wards is governed by space available and the average number of patients handled. The actual physical layout should be as compact as possible.

The contagious ward should naturally be located in a semi-isolated position, and shut off from the other wards, if possible. As previously indicated, the 35- to 40-bed ward has been found to be the most practical working unit in a 2,000-bed hospital.

The medical service is the largest of the professional services, usually headed by a senior medical officer. Through it are funneled many patients who later are assigned to other services or, as in the case of patients suffering from tuberculosis, to other hospitals. When the executive officer is absent, his duties are assumed by the chief of the medical service. That is why the medical officer must be well versed in the organization and facilities of the naval hospital, as well as in professional skills.

SURGICAL SERVICE

The wards of the surgical service contain patients whose care, generally speaking, is a function of the surgeons. The wards are further classified as to the type of surgery, such as general surgery, orthopedic surgery, neurosurgery, and plastic surgery. In addition to wards there will be the operating suite, central supply, Office of the Chief of the Surgical Service, and numerous dressing and examining rooms.

When a patient is to undergo an operation which may endanger his life, permission for the operation is usually obtained; but if the operation is an emergency measure and necessary to save the patient's life, permission is not necessary. Permission for a routine operation may be assumed.

Since it is the duty of the medical officer to ascertain that hospital corpsmen are properly trained for duty

aboard ship or with an expeditionary force, it is advisable that a system of instruction be established to dovetail with the hospital corpsmen's routine duties. This practical training should be invaluable to the hospital corpsmen. It is an important part of both the nurses' and doctors' duties to supervise and present such instruction.

Form 58's (record of operation performed, findings, etc.) are written up immediately after the completion of an operation so that it may be typed by the secretary of the chief of surgery, and attached to the patient's clinical chart. When filling out these reports, operators will consult the nomenclature for operations contained on pages 57-59 in *Diagnostic Nomenclature for the Medical Department of the U. S. Navy*. Careful adherence to this list will eliminate inaccuracies on form P which is the hospital's quarterly report to the Bureau of operations performed.

After an operation, make sure that the ward doctor is cognizant of any condition of the patient demanding special postoperative care.

Records of all infections or other untoward postoperative developments are kept on all surgical wards in a book provided for that purpose.

The officer serving on surgical watch is the representative of the chief of the surgical service. During his tour of duty, the surgical watch will examine and prescribe for all accident or surgical cases admitted to the hospital. Matters for which the surgical watch is responsible should not be delegated to interns. It is the responsibility of the surgical watch to be present at all major operations that are performed during his tour of duty. When not actually participating in the operation, he will act as an observer and consultant.

When the diagnosis is obscure or the surgical risks to the patient are questionable, consultation with the chief of the service or some other qualified member of the surgical staff should be requested without delay. The chief and assistant chief of the surgical service expect and desire to be called in the case of admission of any problem case of a general surgical nature. A senior member of the orthopedic service may be called in consultation, if desired, on any orthopedic problem after hours. In case of serious head injuries, one of the neurological surgeons should be called. Willingness to call promptly for guidance and help when it means saving a life bespeaks a high surgical purpose, rather than the admission of the lack of surgical knowledge or skill.

A history, no matter how brief, should be taken on all surgical cases.

On completion of their night's duty, all members of the surgical watch will leave, on the desk of the Assistant Chief of Surgery, a memorandum containing the number and kind of emergency operations performed during their watch. This memorandum should contain comment relative to any unusual condition found at operation or any extraordinary circumstance that may have been observed in any case during the duty period.

All orthopedic conditions will be attended by a representative of the orthopedic department. The surgical watch of general surgery may, upon request by a member of the orthopedic or any other service of general surgery, perform such services as checking on matters pertaining to the treatment or progress of particular patients.

UROLOGICAL SERVICE

The mission of the urological service is to care for patients with diseases of the genito-urinary tract. Venereal diseases, except gonorrhea, are handled by the dermatology section.

In a typical 2,000-bed hospital there may be two trained urologists, and two medical officers under instruction in urology.

Corpsmen are trained for urology duty within the department. Men requesting such duty are interviewed and, when found genuinely interested, are permitted to transfer. After training on a ward, a corpsman is ready for duty in a clinic.

If possible the urology ward and clinic should be in the same building, with easy access from one to the other. When the cystoscopic unit is part of the X-ray division, the urological ward should be nearby. There is otherwise no preference for location of the service. Like other services, it should be compact. One 35-bed ward is sufficient to care for the number of patients usually handled. The service should have a basic set of cystoscopes: one Young 24 complete (French 24); a Brown-Burger of the same size; a Brown-Burger (French 21); a McCarthy and a Pan-endoscope. Sterilizers and X-ray viewers should be included in the equipment. Electrosurgery instruments are available in surgery.

If the hospital is being organized for duty overseas in an area where a depot of supplies is not accessible, it would naturally be advisable to order enough equipment to have an extensive reserve against breakage or loss.

The ideal service would have its own laboratory, where pertinent tests could be made immediately.

EYE, EAR, NOSE, AND THROAT SERVICE

The administration of this section presents no unusual problems of organization. The number of medical officers will depend on the size of the hospital and the type of patients handled. There will be at least one doctor who is a member of the American Board of Eye, Ear, Nose and Throat.

Part of the service in the hospital is the EENT clinic. This clinic occupies a reception room, space for clerks and files, a room of at least twenty feet for eye refractions and for other darkroom procedures, and at least two well-equipped booths for otolaryngology. In a small hospital, space and equipment for the treatment of allergies should be provided.

In a large hospital the wards may be divided into three divisions: eye, ear, and nose and throat; or into combinations thereof. As on other services, the 35-bed ward seems the ideal size.

The table of allowances makes ample provision for the equipment of this service.

It would be well for any officer entering this service to review the malingering tests for visual acuity and for hearing. It is also well to note that in the Navy endoscopies are done by the EENT specialist.

In general, however, the procedures in the Navy are the same as in a comparable civilian institution.

NEUROPSYCHIATRY SERVICE

Psychiatry in the naval service serves several different and important areas of usefulness and responsibility. In the naval hospital the psychiatrist devotes his time, not only to supervising the medical facilities devoted to the study and treatment of neuropsychiatric patients, but he also sees patients in consultation referred from the other services of the hospital. In addition to his duties referable to the screening and selection of personnel from a psychiatric standpoint, the psychiatrist often serves in an advisory and reviewing capacity in connection with medico-legal problems related to disciplinary and psychiatric cases.

In the naval hospital, the chief of the neuropsychiatric service must pass upon all personnel connected with this service, and satisfy himself that they are able to meet the whole range of special responsibility, from nursing to enforcing ordinary hospital rules and observing cautions in regard to the patients.

The same holds true in the keeping of records. These records should include, not only a record of examinations, but particularly a record of the actions and reactions of patient and family.

Due to the nature of information contained in the health records and medical histories of this group of patients, extra precautions are taken to keep them confidential—they are usually made up in this section, and become the personal responsibility of the ward medical officer.

Security measures on this service must be rigid and exact. This requires a very extensive set of ward orders governing such things as custody of keys, medicine lockers, eating utensils, custody of clothes, toilet gear, methods of locking and unlocking wards, the proper use of restraints, when and how to apply physical force, and many other items too numerous to mention.

The great bulk of patients on this service during wartime are men who are unable to adjust themselves to naval service conditions. A number of these men are borderline cases; they are administrative problems rather than cases for discharge by reason of unsuitability. A review of their service records, in most instances, shows that they are chronic offenders. Most of these men are in open wards and the administrative red tape involved in handling them requires time.

True or suspected psychiatric patients are transferred from naval activities to naval hospitals where they are screened, and diagnosis is confirmed or refuted. Patients requiring psychotherapy appear before a board of medical officers who review the records of the case. When the condition is confirmed, recommendations are made for transfer to a Public Health hospital for further treatment and disposition. See the *Manual of the Medical Department* for full details on procedure.

PHYSICAL MEDICINE SERVICE

During the war an extensive rehabilitation program was developed by the Bureau of Medicine and Surgery and installed in naval hospitals. The program included those facilities which supplement ordinary professional treatment to expedite and return the patient to duty, or promote maximum adjustment for return to civil life.

The scope of this important adjunct in the hospital organization varies with the size and personnel available in each hospital.

As originally conceived by the Bureau of Medicine and Surgery, the rehabilitation service in the large hospitals was divided into five main subdivisions: educational, physiotherapy, occupational therapy, physical training, and civil readjustment. This broad program has been curtailed, due primarily to shrinkage in the hospital patient load and other peacetime adjustment.

Physical training, a component part of the rehabilitation service, has been practically eliminated due to the

demobilization of highly specialized personnel who directed the training activities during the war. The civil readjustment function is rapidly decreasing, likewise, since most of the patients are being returned to duty and are not being discharged to civilian life. In many hospitals this function is being assumed by the personnel department.

EDUCATIONAL SERVICE

This phase of rehabilitation has also been curtailed by reason of the limited number of peacetime discharges.

Most of the functions performed by this service are being discharged by a Veterans' Administration representative located at Navy hospitals to assist and advise personnel returning to civil life. The delegation of this function to the Veterans' Administration representative has proven satisfactory to most of the naval hospitals.

Physiotherapy and its related component *hydrotherapy*, together with occupational therapy, are the most active principals employed in naval hospital rehabilitation service.

It will be found that in practically all naval hospitals this phase of physical medicine is adequate. All hospitals have been equipped with the most modern mechanical devices for the use of heat, cold, water, light, and electricity for the treatment of disease.

Patients treated in this department are usually divided into three classes: those with no physical limitation, ambulant patients with limitation, and those confined to beds or wards.

Recommendations as to the extent of physical limitation should be made by the ward medical officer, based on the condition of the patient; but orders to institute treatment emanate from the chief of the service to which the patient has been assigned.

Treatment begins on the ward under the direct supervision of the ward medical officer, with the assistance of the ward nurse or trained technicians.

Wave officers, or nurses specially trained, have heretofore been in charge of physiotherapy. However, when such personnel is unavailable, civilian technicians may be successfully employed.

The over-all supervision of this service should be in charge of a medical officer qualified in physical medicine. If the service of a qualified medical officer is not available, the chief of orthopedic service would logically be the officer in charge of physiotherapy, inasmuch as the two services are closely related.

Occupational therapy is established in naval hospitals as a form of rehabilitation treatment as well as a diversional activity.

The larger naval hospitals maintain well-equipped occupational therapy shops, adequately designed to treat large numbers of patients. The scope of this form of treatment is governed by the size of the hospital unit. All hospitals maintain arts and skill shops under the auspices of the Red Cross. Most of the occupational therapy performed in the wards is under the supervision of the Red Cross on a voluntary basis.

LABORATORY SERVICE

The laboratory service assists the medical officer: (1) to diagnose disease, (2) to follow the course of disease, (3) to treat disease, (4) to ascertain causes of death and results of treatment by necropsies and (5) to take part in the instruction of interns and laboratory technicians. It also contributes in large part to the continuous education of medical officers.

The laboratory is usually divided into several departments, such as the serology, bacteriology, chemistry, hematology, and animal house departments. At the head of each department—in a large hospital—is either a chief hospital corpsman (laboratory technician) or a junior medical officer, depending on the amount of work. The Navy attempts to have from one to three men in each department. Additional help is available from men under instruction and from interns. In smaller hospitals one man may serve in two or more departments.

The morgue is, of course, under the jurisdiction of this service.

The chief of the laboratory service has an office and a staff that is adequate for maintaining the record of the service. Here doctors may consult complete laboratory records of the various cases and obtain duplicate copies of the tests that have been made on various cases. Ordinarily, a naval hospital will be more fully staffed with clerical help than a comparable civilian institution, and it will therefore be better able to type extra reports or copies of reports—within reason. It should also be borne in mind that because of the many routine reports and examinations required by the Navy, the doctor is given a more complete picture of his patient's previous illnesses than is a civilian doctor.

Because of the large number of routine reports, the chief of service prepares a set of schedules and incorporates them in directives to his section. These directives are also embodied in hospital orders so that there will be no doubt as to when certain tests are to be run.

But it is as a pathologist—a doctor concerned with the diagnosis and follow-up of disease by laboratory methods—that the chief of service is best known. He

must be thoroughly informed in the fundamentals of laboratory medicine, and is expected to keep up with the most recent developments in his field. For it is to him, as a consultant in clinical pathology and pathology, that the medical officers of the hospital may turn for an interpretation of inconclusive or obscure results of laboratory tests.

The autopsies conducted by the pathologist are also an important source of instruction for the hospital staff. As in most civilian hospitals, he conducts post mortem examinations and explains the gross pathology of the body as he dissects.

Navy procedure demands that the doctor mutilate a cadaver as little as possible, and that incisions be made so that they will not be visible when the body is prepared for burial. Blood vessels should be tied off carefully and the skull cap secured. A complete written report is prepared on each autopsy.

Thus the laboratory service fulfills its dual role of furnishing both instruction and analytical information.

X-RAY SERVICE

The X-ray service includes both diagnostic and therapeutic sections. It maintains necessary record files, and files and disposes of X-ray films as directed. The service usually includes radiography, fluoroscopy, X-ray therapy, and photofluoroscopy units.

It is interesting to note the diversity of locations that have been selected for the housing of this important division. In many hospitals, it has been felt wise to place the X-ray department in quarters adjacent to the operating suite. This, it appears, is a logical location because of the necessity for the frequent locating of foreign bodies as well as for the treatment of fractures under the fluoroscope.

Ample waiting rooms should be provided for patients so that passageways may be kept free.

In locating the X-ray service, it should also be remembered that a certain fire hazard always exists in this work. The X-ray service certainly should not communicate with floors above by an elevator or pipe shafts. This is said with a complete knowledge of the safety factors vouchsafed by the use of the cellulose-acetate films. No matter how much confidence one rightfully places in the use of nonexplosive films, storing large quantities of these records in a building occupied by patients, or even adjacent to such a building, is dangerous. Moreover, the accidental admixture of acetate and nitrate films has been known to take place. If any considerable quantity of exposed or nonexposed films must be stored, a concrete vault with a loosely attached roof,

built at some distance from the main hospital building, will meet all safety demands.

Chief of the X-ray service is a medical officer with as many medical officers to assist him as the work load demands. In addition to the medical officers, he should have a number of hospital corpsmen who are X-ray technicians, and strikers who are under training to become technicians. The office should be staffed with civil service employees—probably one clerk-typist, a stenographer, and an X-ray technician.

The chief of the X-ray service should issue the necessary orders to carry out the routine in the X-ray rooms. He should have incorporated in the hospital orders the schedules; i.e., G. I. series, Monday a.m.; chest X-rays, Thursdays, etc.

The X-ray service is strictly a referral service, a cooperative venture between clinician and the X-ray medical officer in making a correct diagnosis. In cases requiring deep therapy, the service assists the ward medical officer in applying therapeutic measures.

PHARMACY SERVICE

A hospital pharmacy is that service of a hospital in which drugs, medicines, and medical supplies are prepared, standardized, packaged, stored, inspected, dispensed, and distributed under the direction of competent pharmacists.

For standard hospital formularies naval hospitals use the *United States Pharmacopoeia*, the *National Formulary*, and the *New and Nonofficial Remedies*. In most large naval hospitals, however, it will be found that these have been supplemented by an individual hospital's formulary. This standardization is conducive to economy, lightens the work of the pharmacist, and furnishes the interns and attending medical officers a simple way of treating patients. Except in the case of unusual drugs and prescriptions, orders are issued in accordance with this standardization.

In planning the physical makeup of a pharmacy, one must take into consideration the type and size of the hospital. A hospital basically handling a large number of neuropsychiatric patients will not require as large a pharmacy as a hospital with a large medical department or outpatient service. The size of the pharmacy, all other elements being equal, will be directly proportional to the size of the hospital.

The pharmacy should be located and constructed in such a way as to manufacture and distribute its products to patients, staff, and personnel with efficiency. It should be in an accessible location where it may be easily reached, but should not be so constructed that unauthor-

ized personnel will have access to the supply of medicines. Within the pharmacy itself, there must be enough space for dispensing (that is, the drawing up of prescriptions), and for manufacturing and storing drugs. Space must also be available for records and necessary equipment. This equipment includes fixtures, vaults, stoves, stills, shelves, drawers, closets, tables, refrigerator, sinks, and drain boards.

For efficiency, as well as for good morale, the pharmacy should be well lighted, clean, and roomy. The bottles of drugs should always be marked with unequivocally clear labels, and a uniform drug arrangement should be carried out insofar as it is practicable. This arrangement, which should follow the pattern of the supply table, not only enables personnel to find drugs in their own pharmacy easily, but also facilitates breaking in new men from other duty stations where, presumably, the same arrangement has been followed.

Every hospital should strive for a system of rational therapeutics. With the exception of products which must be analyzed before use, as many drugs, medicines, and medical supplies should be manufactured in the pharmacy as is practicable. Care should be taken in the purchase of proprietaries in the open market. So varied are the ingredients of trade-marked drugs that ordinarily naval hospitals have found it necessary to insist on standard preparations.

The pharmacy itself maintains sufficient stock on its shelves to fill the immediate needs of the hospital. This stock is replenished weekly by requisitions from the medical storerooms. The items requisitioned may be by the case, box, or bottle, but never less than the smallest unit as listed on the supply table. Needless to say, on reissue by the pharmacy, the item will be in much smaller quantities.

The actual reserve stocks of drugs are kept in the medical storeroom of the finance division. The officer in charge of the pharmacy should keep the finance officer informed of any marked change in the rate of usage of the various drugs so that he may set "order points" at which he will procure more supplies, and thus keep the storeroom well enough stocked to cope with the demands of the hospital.

The finance officer is responsible for a well-correlated plan of purchase, receipt, and inventory of drugs; the pharmacy is responsible for their distribution to the various activities within the hospital.

Hospital regulations usually cover the responsibility of the pharmacy for the following:

1. Issue of drugs and medicines to the wards. Routine

refills and issues of standard preparations are requested on standard order forms.

2. Issue of alcohol and narcotic prescriptions on regular prescription forms signed by the medical officer.

3. Issue of dangerous drugs is handled in about the same manner as narcotics and alcohol.

4. Regulations on the control of dispensing to dependents.

5. Regulations on the issue of certain poisons to the wards.

6. Schedule for the issue of drugs, changing of labels, control of bottles, etc.

7. Regulations covering the issue of certain dangerous drugs to patients on leave.

DENTAL SERVICE

The chief of the dental service is one of the many chiefs of the various professional services. His, like other professional services, is a vital part of a complete hospital organization.

The duties and responsibilities of a dental officer and the chief of the service can be found in the *Manual of the Medical Department*. Below is listed the functions of a large and complete dental service in a naval hospital.

1. Furnishes dental treatment for all patients assigned or referred to the service.

2. Operates oral surgery, prosthetic, and operative sections.

3. Performs dental examinations and surveys.

4. Keeps necessary dental reports and records.

5. Operates stock room for dental supplies for current use.

6. Trains dental personnel.

7. Operates dental ward.

8. Operates ocular prosthesis.

9. Maxillofacial surgery.

10. Maxillofacial prosthesis.

The importance of adequate care of the teeth has been increasingly recognized in recent years.

The types of service rendered by the dental service varies from the simple prophylactic treatment in a small hospital to the complete dental service in a hospital such as is being described.

The dental service in a 2,000-bed hospital would have a ward containing about 30 beds. Dental patients, or those patients whose injuries or illnesses are primarily dental, would be admitted to, and carried on the roster of, the dental ward. The operation of the dental ward is the responsibility of the dental service.

Most of the treatments and examinations handled by the dental service are on patients referred to the service.

The patient remains on the service which is handling the major cause of his hospitalization. In a national emergency, there will be joint responsibilities in handling such cases as ocular prosthesis, maxillofacial surgery and prosthesis. This, naturally, would require close cooperation and harmony between the medical and dental officers.

The chief of the Dental Service, because of the large amount of referred work, should have published in the hospital orders the routine to be followed in referring cases to his service.

The dental service furnishes logistic support on dental matters to the command.

NURSING SERVICE

The mission of the nursing service of a naval hospital is designed to provide the best possible bedside nursing care; to cooperate in the training of hospital corpsmen; and to organize, plan, supervise, and coordinate such service with other hospital activities.

The *senior Nurse Corps* officer, as chief of the nursing service, fills a position similar to that of a supervisor of nurses in a civilian hospital. Under the supervision of the commanding officer and the executive officer, she is charged with: organizing and directing the entire nursing service, and indoctrination of new Nurse Corps officers; planning and participating in a teaching program; keeping informed of the policies established by her superiors and supervising the execution of such orders as they may issue; directing and supervising the work incident to the care and treatment of all patients assigned to each phase of hospital service; preparing detail lists and arranging watch lists for Nurse Corps officers for the approval of the Executive Officer; accompanying the medical officer on inspection; maintaining records of qualifications and accomplishments of Nurse Corps officers attached to her activity; conferring with the medical staff; preparing reports; and making pertinent recommendations concerning Nurse Corps personnel, and assigning them to duty.

Nursing supervisors, under supervision of the senior Nurse Corps officers, are charged with: analyzing and evaluating the nursing services required; assisting in the instruction of nurses and corpsmen and supervising the application of such instruction; assisting ward nurses when necessary; performing administrative duties; assisting in maintaining the high standard of care and treatment of patients; housekeeping duties; and maintaining discipline in the group to which they are attached.

Ward nurses, under supervision of nurse supervisors

and ward medical officers, assist in the bedside care of patients; administer medication; assist the doctor with dressing of wounds, prepare diet lists and supervise the diet service. They are responsible for administrative records and T.P.R. charts; assist at operations; receive patients; handle transfers and discharge of patients; observe and record facts indicative of change in condition of a patient; train corpsmen in bedside nursing; maintain discipline on the ward; post assignment lists for corpsmen, giving explicit instructions; prepare patient liberty lists; and maintain the cleanliness of their wards, diet kitchens, and other areas under their supervision. They are responsible for medical and linen supplies, deliver lectures on personal hygiene and supervise personal hygiene in both patients and corpsmen.

A large part of bedside nursing is carried out physically by hospitalmen under the direct supervision and instruction of ward nurses. After completing short courses in hospital apprentice schools, these men are sent to hospitals for further training. Being new and inexperienced, their duties are mainly nonprofessional, such as delivering mail, carrying supplies, learning to make various types of beds, walking with or wheeling patients, assisting in taking inventories, assisting in the diet kitchens with the preparation and serving of meals, sorting and distributing linens, and general housekeeping duties. As these routines are mastered, the hospitalmen progress to taking temperatures and pulse and respiration counts, giving enemas and baths, alcohol rubs, and caring for anesthesia patients. Gradually, under the tutelage of the ward nurse, they progress to giving treatments and the handling of more seriously ill patients, to taking care of oxygen tents, seeing that proper temperature and ventilation are maintained on various types of wards, and making an anesthesia bed.

DEPENDENTS' SERVICE

The subject of medical care for dependents of naval personnel is a matter of great importance to the Bureau of Medicine and Surgery. It is felt that no greater morale factor exists in our Navy. Consequently many hospitals, dispensaries and other facilities have been designated to care for dependents. Designation of such facility is made by the Surgeon General, subject to the approval of the Secretary of the Navy.

DEPENDENTS

Dependents of naval personnel, entitled to hospitalization and outpatient service at Medical Department activities, are defined as a lawful wife (but not a common-law wife), dependent children under 21 years of age,

(child may be natural, adopted, or step-child), dependent father and mother of a regular member of the Navy, Marine Corps, Coast Guard, or Reserve personnel on active duty.

ELIGIBILITY FOR TREATMENT

To be eligible for hospitalization the patient must be:

1. Dependent of regular Navy, Marine Corps, Coast Guard, or Reserve personnel on the active list.
2. Dependent of retired personnel of regular Navy, Marine Corps, Coast Guard, or Reserve on active duty.
3. Dependents of all Reserve personnel performing active duty other than training duty.
4. Dependents of retired personnel of regular Navy, Marine Corps or Coast Guard not on active duty, and of retired personnel of the Naval Reserve, Marine Corps Reserve or Coast Guard Reserve, retired with pay and not on active duty.
5. Dependents of enlisted personnel transferred to the Fleet Reserve or Fleet Marine Corps Reserve after 16 or more years of service.

OUT-PATIENT CARE

Out-patient medical service is provided by the Navy for dependents of Navy and Marine Corps personnel only, by naval medical officers at naval dispensaries, naval hospitals, or other Medical Department activities where out-patient facilities exist. This comprises treatment given at naval dispensaries, or, in emergency and at certain stations only, at the home of the patient, as distinguished from in-patient or hospital care, and is not restricted to naval hospitals or dispensaries authorized for actual hospitalization of dependent patients.

IN-PATIENT CARE

In designating dispensaries or hospitals for in-patient or hospital care, consideration must be given to existing civilian hospital facilities, capacity of the designated institution and the possible case load in relation to the presently attached Medical Department personnel. The medical officer in command of the hospital concerned or the senior medical officer of the dispensary shall determine the fees for hospitalization and the availability of suitable accommodations.

Dependents will be admitted to hospitals as in-patients only for acute medical and surgical conditions, exclusive of nervous, mental, or contagious diseases or those requiring prolonged care because of chronic diseases.

Dependents admitted for in-patient treatment shall be entitled to all regular medical and hospital services. Drugs and materials shall be issued only on the pre-

scription of a naval medical officer for use or administration under his supervision.

The Navy does not furnish transportation to and from points of hospitalization.

HOSPITALIZATION PAYMENTS

Payment for hospitalization shall be made at the end of each week, semimonthly, or monthly, as the commanding officer may direct. Payment at the close of each calendar month, or prior to discharge of the patient, shall be required in all cases. The commanding officer, at his discretion, may require advance deposit of a sum sufficient to cover the probable number of days of hospitalization and may thereafter require that sufficient funds remain on deposit to cover additional advance periods.

RATES

Rates for hospitalization shall be set at the prevailing rate as specified by the Federal Board of Hospitalization.

OBSTETRICS AND GYNECOLOGY

This service cares for the gynecologic and obstetric patients of the families of Navy personnel, and for WAVES and Women Marines. Female veterans are not included in this service.

The Chief of Service should be a member of the American Board of Obstetrics and Gynecology. In the nursery, the medical officer in charge should be a member of the American Board of Pediatrics. In a large hospital with an extensive training program there would be a varying number of residents and interns. For example, at Bethesda, a 2,000-bed hospital, there are seven residents on a 3-year training program, and four interns.

Nurses may be civilian or naval personnel. They are not only in charge of the administration of the ward (under the ward medical officer), but are responsible also for bed care of patients, since there are no hospital corpsmen in this service.

In most respects this service is identical with its civilian counterpart.

ADMINISTRATIVE DIVISIONS

The purpose of the *administrative divisions* is to carry out the nonprofessional business management of the hospital. Each division is headed by an officer of the Medical Service Corps, who is held accountable to the commanding officer for the operation of his division.

ADMINISTRATIVE ASSISTANT

When it is desirable to relieve the executive officer of certain details of administration and/or assign him

an assistant, the following is proposed: A Medical Service Corps officer is assigned and designated the Administrative Assistant. The position is primarily that of coordinator similar to an executive secretary in a civilian institution. His duty is to relieve the executive officer of administrative details and should not, in any way, conflict with the function of other administrative divisions.

The functions of the administrative assistant, subject to the direction of the executive officer, shall be:

1. To advise and assist in the nonprofessional functions, management, and operation of the hospital as a facility;
2. To keep up-to-date information regarding laws, regulations, policies, and instructions pertaining to naval administration in general and especially those applicable to the administrative management of the facility;
3. To keep the executive officer informed and make such recommendations as may be indicated, with respect to the effectiveness of administrative organization and management;
4. To be responsible for the accomplishment of all routine matters of an administrative nature, not requiring the personal attention of the executive or commanding officer.
5. To assume such collateral duties as may be assigned by the executive officer.

PERSONNEL DIVISION

The responsibility of the chief of this division in naval medical facilities varies with each command. In small facilities, he may be directly responsible for the organization and supervision of the personnel division, while in larger commands he may be charged only with functions at a high level. Regardless of the assignment, all officers of the medical department should have a sound general knowledge of personnel management to function effectively, as the broader phases of this subject affect every hospital activity.

The succeeding material is devoted to a discussion of the organization and functions of a personnel division in a medical department facility of any type, as well as to some of the more urgent problems confronting an officer serving as head of such a division.

In the naval hospital the custody, maintenance, and distribution of records and reports pertaining to all staff and patient personnel is one of the primary functions of the personnel division. This division acts as a communications center through which passes all pertinent information to and from outside commands. It also expedites

the flow of personnel data to the interested hospital unit.

In addition to the record-keeping responsibility, the personnel division is charged with the task of training and organizing its own personnel. Under the direction of the executive officer, the officer of the Medical Service Corps, who ordinarily heads this division, also coordinates the assignment of enlisted staff personnel and enlisted patient personnel to various work details. The broader phases of personnel management, however, involving such questions as the procurement, allocation, and reallocation of personnel within the hospital are usually the responsibility of the executive officer.

Considerable information on methods and procedures designed to increase the individual effectiveness of each worker emanates from the personnel division. This material includes approved work guides, orders, directives, circulars, and other instruction materials. Procedure guides should be made available to all officers within the command who are charged with supervision of administrative work if time-wasting methods are to be eliminated and uniformity of procedure is to be achieved. Medical officers, for example, should have a procedure guide on medical surveys that contains samples and all current directives pertaining thereto.

In wartime, intricate procedures relating to work assignments, the upkeep of the physical plant, preparation of forms, and other personnel matters are often developed to handle the heavy work load. It is the responsibility of administrative officers to review constantly these methods and procedures in the interests of work simplification.

Personnel officers are responsible for duplication of approved directives, and orders modifying current procedures. These are distributed to all officers so that their files of official material may be kept current at all times. An error too frequently made by officers is to issue a directive when some unimportant item of information must be passed on to the staff. In a short time the officers' folders assume mountainous proportions, and important directions are lost among a mass of unessential material. If directives are expected to be read and followed, officers are urged to keep them simple, brief, and to a minimum consistent with the principles of good management.

The necessity for division of work among various subordinates creates one of the most difficult problems of personnel administration. It is a basic principle of efficient management that a division head must assign to others the actual performance of the work. He must delegate authority as well. Yet the tendency is for officers

to retain far too much authority in their own hands and to perform too many tasks; hence the sight of officers taking home bulging brief cases, or spending evenings at the hospital. In a situation of this type, subordinates fail to develop the initiative needed to handle emergencies.

When the work load becomes too heavy for one officer, it must be divided among assistant administrative officers. This will aid in the development of capable assistants and contribute to the over-all efficiency of the hospital organization. The same principle holds true for tasks which are too complex for an untrained worker to perform satisfactorily. Nothing is more discouraging to a new or untrained employee than to feel that an assigned task is beyond his ability. In such instances, work should be subdivided among several people, and each assigned separate tasks.

Medical officers bear a direct responsibility for one of the most important functions of the personnel division: it is their duty to ascertain that records and reports are complete, accurate, and current at all times. Much of the basic information for this essential task originates with the medical officer and the nurse. For example, it is highly essential that an officer be thoroughly familiar with the *Standard Navy Nomenclature* of diseases and injuries so that he can detect the failure of ward medical officers, or others, to use the prescribed diagnostic nomenclature. He should maintain a procedural folder and always adhere to prescribed nomenclature. If ever in doubt as to the proper procedure while on duty, the medical officer should check with the supervisor of the Bureau of Medicine and Surgery Section.

Ward nurses must also be reminded periodically that accurate and complete ward reports are necessary to the successful maintenance of personnel records. The importance of ward reports as the basis for information contained in the weekly report of patients (NavMed-1), and other reports, should also be stressed.

Organization of the personnel division. It is now standard practice in naval medical facilities to organize the personnel division on the basic pattern shown in figure 7. This form of organization provides for the assignment of personnel functions concerned mainly with enlisted and staff personnel records, reports, and assignments to these offices: the patient records office, the military personnel office, and the civilian personnel office. Administrative experience has proved this type of centralized organization to be highly effective, since it eliminates duplication of activity, prevents interdepartmental competition, and secures common procedures at key points.

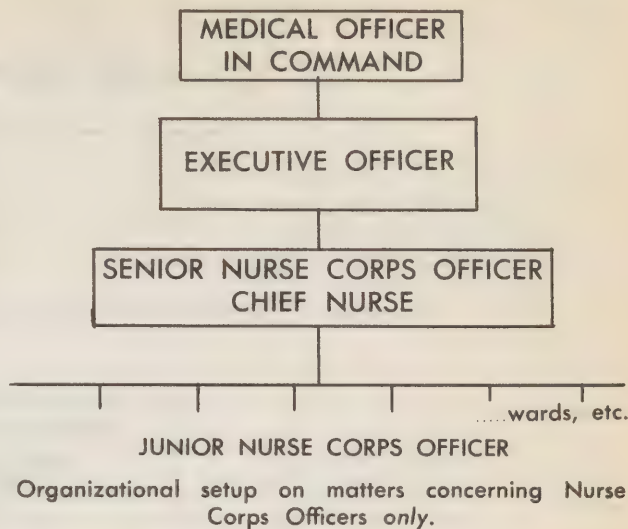


Figure 7.—Personnel division.

In an emergency, however, when the patients and staff personnel load is heavily increased, the internal structure of the personnel division may be modified to meet increased responsibilities. Subdivisions of the personnel division, in such cases, may be expanded and regrouped as shown in figures 8 and 9. This emergency type of organization provides for two offices: a patient records office, responsible for patients' records, and a staff personnel records office, responsible for records of the staff.

Regardless of the organizational form of the personnel division, the functions of the administrative units within each subdivision will be identical. The succeeding discussion, therefore, will be limited to a functional description of the organization shown in figure 7.

PATIENT RECORD OFFICE

BuMed section.—This section is responsible for compilation of statistics on personnel, morbidity, and rations, and for the preparation of forms required by the local naval district, or by the Bureau of Medicine and Surgery. The custody, maintenance, and distribution of the patients' health records are also duties of this section. Functions of this section are assigned to the following desks:

"F" card desk.—The "F" cards are reports to the Bureau of each admission. On these cards is recorded a description of the patient's Navy status, diagnosis, change of diagnosis, and final disposition from the sick list. Data on "F" cards is usually typed from the admission card and the patient's health record. Such information

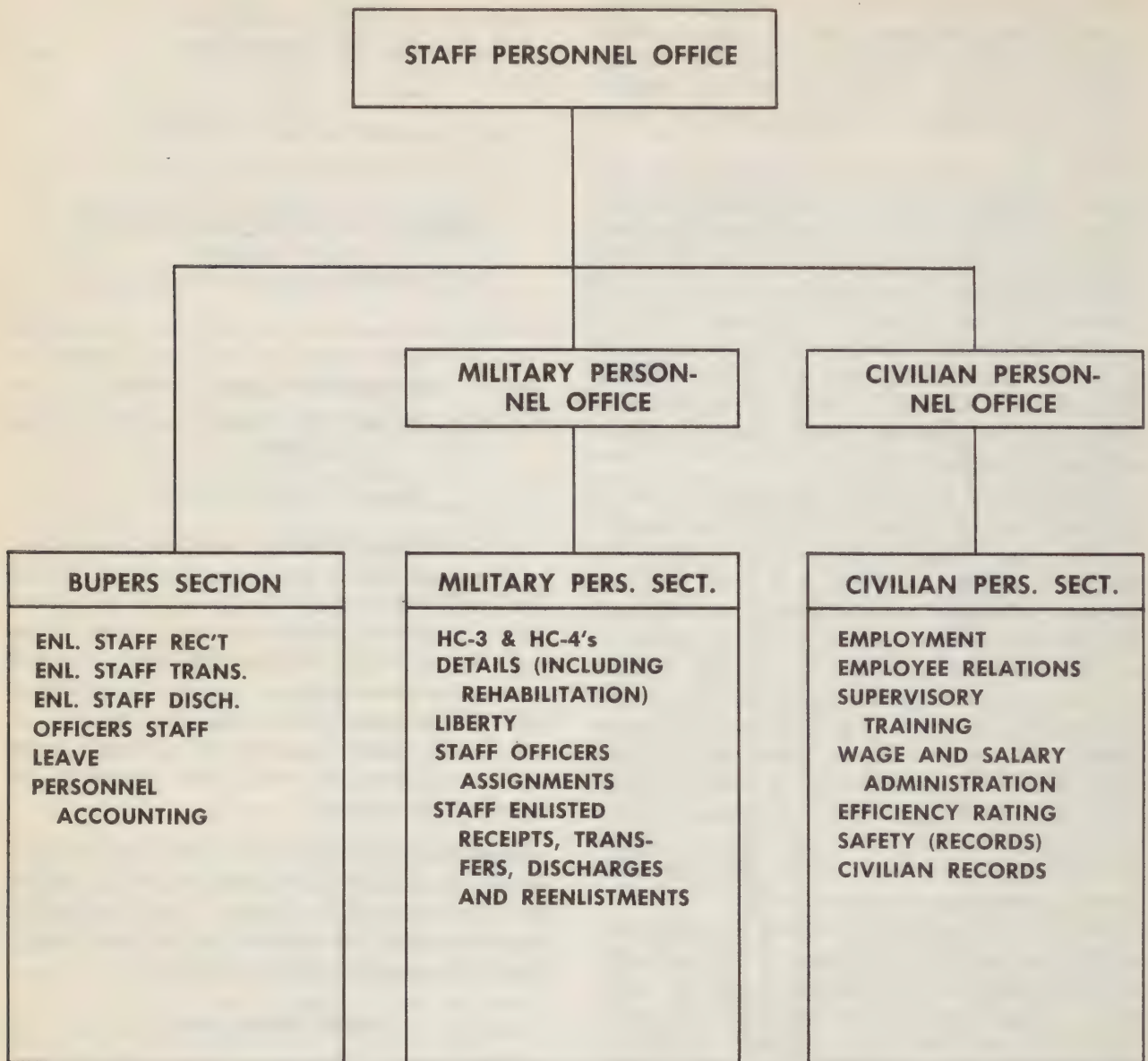


Figure 8.—Staff Personnel Office

must be accurate and must reflect any change in diagnosis, since it will be entered on abstracts in the records office to be inserted in the patient's medical history and on statistical forms forwarded to the Bureau.

Alertness on the part of the medical officer will eliminate the possibility of delay and error in preparation of these cards. Whenever a change in diagnosis is made, the medical officer is required to forward the patient's chart to the records office, by a corpsman, for a check on the accuracy of the chart. If errors have

been made, the chart must be returned and the process repeated; thus the preparation of essential records is slowed down considerably.

Morbidity reports desk.—This desk prepares comprehensive daily work sheets, on which the number of bed patients is listed according to disease. Daily totals are entered on the statistical morbidity reports, a monthly report to the Bureau of Medicine which gives statistics on staff, transient, or temporary personnel admitted to the sick list during the month. It includes also a

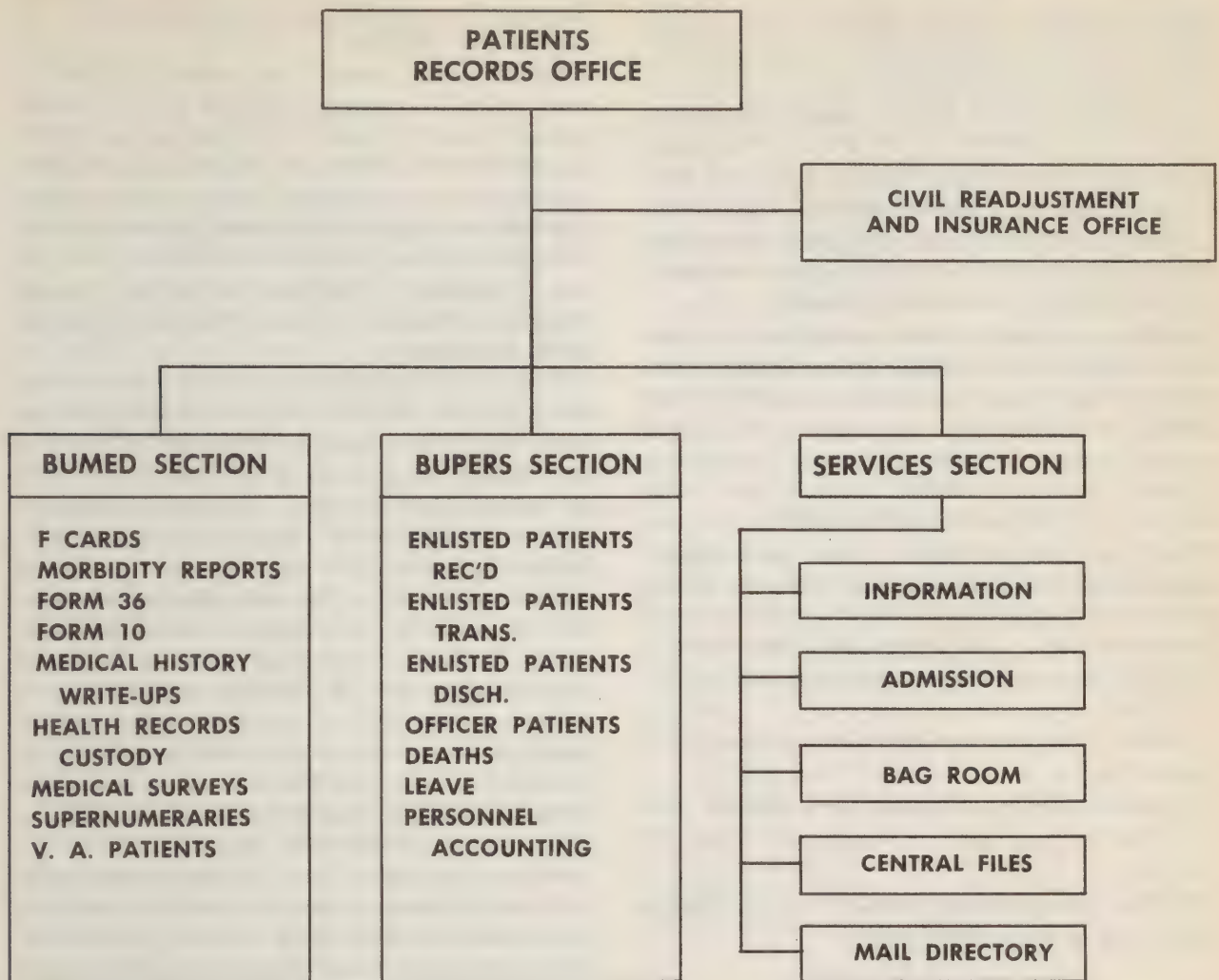


Figure 9.—Patient's Records Office

detailed listing of all diseases grouped according to diagnostic class and selected diagnosis.

A weekly report of communicable diseases prepared by this desk summarizes the number of staff personnel on the sick list with certain specific communicable diseases and also the average number of staff personnel. It is submitted to the authority designated in current directives.

Form 10 desk.—This form is a daily personnel report prepared for local use. It includes a bed census of all staff patient personnel, classification of patients, census of patients, and a census of attached staff personnel. It also includes a detailed listing of patients admitted and discharged. Since this report is distributed widely to the Department and Services, and provides valuable

information necessary in the preparation of other reports by the personnel division, the necessity for prompt attention to information required for preparation of this form is obvious. Information for form 10 is received from the ward report (NavMed-HF-9), recapitulations, admission cards, and memoranda from several sources.

Form 36 desk.—The duties of this desk include the compilation of statistics on the number of rations consumed, rations sold, and collections for rations. This data is tabulated for the Bureau monthly, on a standard ration record (NavMed-36).

Since the preparation of the ration record is not a full-time duty, the weekly report of patients (NavMed-I) is prepared at this desk. Further, the weekly

report of patients logically belongs in this section, because of its close relationship to other statistical reports prepared for the Bureau.

The weekly report of patients contains detailed statistics on the availability of bed space at the hospital, and an explanation of the utilization of this bed space among the several categories of patients being treated.

Health record custody desk.—All health records, service records, pay accounts, and other papers subsequently received from duty are directed to this desk.

Medical survey desk.—When the ward medical officer decides that a patient should appear before a local medical survey board, the details are handled by the medical survey desk. At certain intervals the officer is required to check his roster of patients. In peacetime he usually conducts a medical survey on each officer who has been on the sick list for 90 days; on each enlisted man after 6 months. During an emergency this procedure may be modified somewhat. File indexes on each survey case are maintained for ready reference. Surveys forwarded to the Bureau of Medicine and Surgery for approval are endorsed in accordance with existing directives.

Medical history write-up desk.—Prepares abstracts of medical histories.

Supernumerary desk.—Patients not within the category of service personnel or of veterans are handled by this desk.

Veterans' Administrative desk.—This desk supplies information on hospitalized veterans.

BUREAU OF NAVAL PERSONNEL SECTION

This section is primarily concerned with the maintenance of personnel files and records for the completion of forms and reports for the Bureau of Naval Personnel. These records contain the current change of duty status on all officer and enlisted patient personnel.

The following basic work-groups will be found in this personnel section of every naval hospital, regardless of the number of patients.

Enlisted patient receipt desk.—Each step in a patient's hospitalization, from his admission to his discharge, requires some action by this section. When an enlisted patient is admitted, this desk notifies his last duty station and the Bureau of Naval Personnel; the pay account is transferred to the disbursing office. If disciplinary action is pending, all necessary information is transferred to the proper authorities. It also has custody and security of the Service Record and prepares a muster card

recording Navy and Marine enlisted patients for "on-board muster" purposes.

Enlisted patient transfer desk.—When enlisted patients are to be transferred back to duty, to another hospital, or out on approved survey, the Enlisted Patient Transfer Desk is notified by a Ward Duty or Patients Disposition memorandum from the ward medical officer. This desk then compiles lists of these patients, notifying all interested offices and activities. The initial duty list must be prepared in sufficient time to allow for the preparation of orders, completion of records, and check-out of the patient.

Enlisted patient discharge desk.—All patients being discharged from the Navy as a result of medical survey, unsuitability, bad conduct, undesirability, or dishonorable discharge are processed by this desk. In such cases the regular Navy separation process, including civil readjustment, is followed. Applications of patients for the Fleet Reserve are also expedited here.

Officer patient desk.—This desk maintains officer patient records and prepares all reports and forms for the Bureau of Medicine and Surgery and the Bureau of Naval Personnel. Official documents received with the patient are transmitted to the proper offices, and the orders are endorsed and filed for safekeeping during the patient's hospitalization. Endorsements or orders are prepared and the necessary papers are processed.

Leave desk.—Prepares leave papers.

Personnel accounting desk.—Information relating solely to patient personnel, but not to medical matters, is supplied the Bureau of Naval Personnel by this desk. A unit, acting in a similar capacity for staff personnel, is a part of the military personnel section.

Care-of-the-dead desk.—All matters pertaining to deceased patients are processed by this desk. It prepares daily, serious and critical lists and all forms and reports on deceased patients, maintains pertinent records, and disposes of the remains. Since the officer of the day has important responsibilities for the care of the dead, close liaison must be maintained with that officer. A procedural guide, for example, should be supplied to all medical officers serving as OD. Contact must be maintained with the OD's office to see that the following steps in caring for the dead are carried out: (1) release a form dispatch to next of kin; (2) complete the State death certificate; (3) complete the Navy death certificate; (4) make an inventory of personal effects; and (5) inspect and approve the condition of the remains.

An autopsy and post mortem examination are contingent on the recommendation of the medical officer to the commanding officer. The results of all autopsies

should be recorded fully in the reports of death and health records.

SERVICES SECTION

Miscellaneous services are grouped together under this section.

Information.—This desk, generally a part of the officer of the day's office or located nearby, answers information requests on patients confined to the hospital. Personnel engaged in these activities are directly supervised by the OD, but are assigned by the personnel officer.

A master locator file, consisting of a visible card index of patients' admission cards, makes essential personal data readily available. In this file are recorded interward transfers, as well as daily changes in admissions, and discharges, deaths, and other pertinent information. Colored tabs on file cards assist in locating critically and seriously ill patients. Specially marked cards record the time of departure and the expected time of return of patients on leave. Information concerning staff officers, their current location and any change in assignment, is recorded in a separate section of the visible index.

When the officer of the day notifies the information desk of deaths in the hospital, the appropriate card is removed and the death noted on it. This card becomes a record to establish the exact time of death for vital statistic reports prepared in the records office. Information concerning the placement on the serious or critical list or removal from it is also recorded on the master locator index. In an emergency, the increased volume and turnover of patients requires a high degree of selectivity in assignment of personnel to the mail directory and information services.

Bag room.—The bag room is charged with the custody of patients' personal effects and baggage. Adequate areas with sufficient storage-bin space are provided.

Central files.—The filing and control of patient clinical records are major responsibilities of the central files unit. Since constant reference must be made to the patient's jacket, a large manila envelope into which the complete medical records are eventually inserted, is prepared on admission of the patient and is immediately sent to central files for alphabetical filing. It remains there during the period of the patient's hospitalization.

At the time of the patient's disposition, in clinical records and a copy of the admission card, showing the disposition, date, and the authority, are received by central files. The clinical record and admission card are inserted in the jacket, and a copy of the admission is filed alphabetically for crossreference. The patient's jacket is

removed from the alphabetical file and refiled according to hospital register number. This file on discharged patients is maintained in central files for a period of 2 years, and is then forwarded to a records disposal center.

All processing of incoming and outgoing correspondence, including the receipt and transmittal of official documents pertaining to admission of patients, is usually handled in the central files unit. Incoming mail is picked up several times daily from the post office and distributed. The clerk opens, screens, and sorts routine mail, and forwards important mail to the administrative officer for action. In wartime the larger volume of work requires that a special effort be made to keep files up to date.

MILITARY PERSONNEL SECTION

The military personnel section is responsible for receiving, assigning, transferring, and discharging enlisted personnel, for handling reenlistments, and for maintaining staff personnel records.

Functions of this section are divided into the following desks:

1. Personnel data desk (Hospital Corps)
2. Enlisted detail desk
3. Enlisted receipt, transfer, discharge, and reenlistment desk
4. Staff officer desk
5. Master-at-arms desk (maintenance of discipline: investigations, masts, punishments, etc.)

CIVILIAN PERSONNEL SECTION

Selection, training, pay policy, assignment of duties and supervision, employee records, and other matters pertaining to civilian employment are handled by the civilian personnel section.

Because of frequent changes in the assignment of enlisted personnel, it is often necessary to have certain work assignments carried out by civilian supervisors and clerks in order to give continuity to the hospital organization. The employment of civilians, however, usually gives rise to several difficult problems that must be overcome if the stability of the organization is to be maintained. Certain civilians with specialized training and experience often become indispensable to an organization, and their separation has a disrupting effect that is almost incalculable. In the absence of Government controls, they also change jobs frequently, thus contributing to a high labor turnover rate. To cope with these situations, it is important that a training program that includes both on-the-job and replacement training be

instituted. A few enlisted men should be trained in supervisory capacities to act as replacements to fill emergency needs. Shifting an employee who has been too long at one task to a new one, in addition to stimulating a worker to better effort, will also increase his value to the office as a replacement.

A replacement program is highly essential for institutions located outside the United States, as competent civilian personnel is often difficult to find in foreign areas.

FINANCE DIVISION

The regulations governing fiscal operations performed in naval hospitals are prescribed by accounting instructions issued by the Bureau.

The finance officer has supervision of as difficult and complex a section as any hospital division chief. The officer assigned to this position must have had academic training in accounting and experience in some responsible position in finance. Once officers are selected and trained for fiscal assignments, they should be retained and not rotated with other administrative positions.

Whether civilian or military, storeroom personnel and supervisors must be trained storekeepers or interested in becoming storekeepers. When there is lack of interest, many mistakes will be made; stores will not be checked or recorded accurately upon receipt and issue. In the presence of such carelessness frequent inventories alone will enable the finance officer to know what he has in the storeroom.

It is highly desirable to place a qualified civilian storekeeper in charge of the storeroom, and hold him accountable for all material in the issue bins and bulk storerooms. He shall, in addition, be responsible for training all personnel, whether civilian or military, who are assigned to this section. Continuity, afforded by a civilian in charge, is particularly important in this type of position. When a civilian storekeeper is not available, a chief warrant officer or junior Medical Service Corps officer should be assigned. A chief hospital corpsman or hospital corpsman, first class, however, may be assigned to the stores and equipment section, including the storerooms, for training purposes.

The Kardex medical stores record system should be an integral part of the storeroom operation. Since the primary purpose of this system is to establish information on stores ordered, received, and issued, it is believed that operations will be facilitated and duplication of effort avoided, if the record is located in the immediate storeroom area. Some hospitals have set up the system and placed the files in the main office, rather than in the storeroom. The storeroom, as a result, has to maintain duplicate stock cards in order to have necessary information available.

Ledger sheets on stores (Form W) are being maintained at present (1948), but will probably be discontinued when the Kardex medical stores record system has been fully established in all the hospitals.

The stores and equipment sections should be the responsibility of one organizational unit. Although this plan is not recommended, in some instances the stores

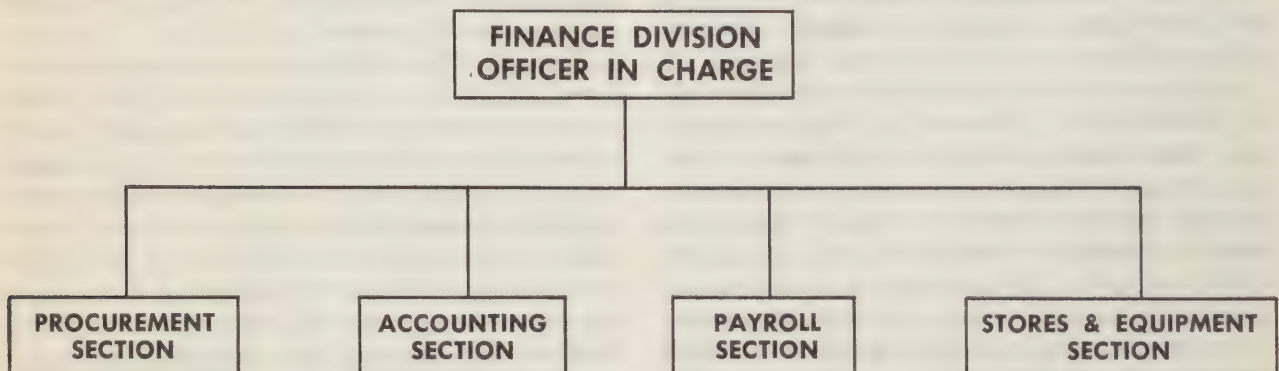


Figure 10. Finance Division—Organization Chart

and equipment personnel are separate both functionally and physically, while certain problems pertaining to equipment do not apply to stores and vice versa. Work pertaining to both is similar enough to warrant consolidation under one supervisor. Although specific persons in this section would be primarily concerned with either stores or equipment, they would be interchangeable and therefore available for any duties within the unit. The tendency to maintain separate units when not absolutely necessary, leads to over-organization, excess staffing, lack of coordination, and limited flexibility in personnel assignments. Though the separation of this section into separate units may be necessary in a national emergency because of crowded working conditions, this separation should be avoided if possible.

At regular intervals the finance officer conducts a complete inventory of all equipment assigned to the command. The property officer, usually from the accounting section, and two hospital men form an inventory team. Making a tour of the sections of the hospital, the team uses one experienced person in each section to aid them in the inventory. The books of the finance section are adjusted according to the findings of each inventory.

It is necessary to assign a property number to each item of equipment valued in excess of fifty dollars. This number is usually imprinted on a metal tag which is then fastened to the article. Since the process is time-consuming, the better method of using "decals" has been developed. "Decal" is a generic term for various types of identification markers currently used by the Navy in many offices. These decals may be stickers, tags, or stencils.

In the receiving room a requisition properly made out is sufficient evidence of the receipt of an order. The requisition is forwarded to the procurement section. Variations from this simple procedure are found, however, in various hospitals. Some prepare a special receiving record or inspection form. Others keep numerous logs and other records on shipments received. Since the receiving clerk puts a check mark on the requisitions indicating each item received and thus can determine from the requisition whether items have or have not been received, practically all of these more complicated records are of questionable value.

Many hospitals replenish stock without regard for usage rates. Such a procedure can easily result in getting either too little or too much of a particular item in stock. If the stock is depleted too soon, it is often necessary to resort to *emergency open purchases*. Since drugs and other supplies are much more costly when ordered in small quantities from local concerns, open market pur-

chases tend to increase procurement costs. The large amount of paper and record work involved in each purchase also increases hospital costs. Conversely, overstocking is equally uneconomical since excess time is consumed in handling, inventorying, and maintaining the unnecessary stores. One solution to the problem lies in the establishment of sound usage rates and order points, based primarily on past experience. The new Kardex stores system, if properly utilized, will furnish accurate data for usage rates and will result in more economical operation. Each hospital should pay particular attention to this phase of stores maintenance.

In order to furnish data for the expense analysis register, a military staff is maintained to determine the cost of the pay and allowances of military personnel. Detailed procedures have been established to obtain exact information on the daily assignments of the military staff. Obtaining this exact information is a very involved procedure and at the present time is figured on a day-to-day basis. In a national emergency it is doubtful that this would be carried out.

During war the final figures on military costs are not, and do not need to be, absolutely accurate for expense analysis. The cost of military pay and allowances would probably be computed on a monthly rather than a daily basis. The end result would be approximately the same, the losses and gains would balance themselves. Consequently, according to the breakdown on the expense analysis register, over-all costs would not be materially affected by conversion to a monthly basis.

An *open purchase* is the procurement of drugs or of other items directly from a commercial concern. An open purchase permits a hospital to obtain necessary supplies in an emergency. Although open purchases are often essential, because of their higher cost they should be kept to a minimum consistent with the needs of the hospital at the time of the emergency.

If their purchase is not carefully controlled, stocks of open purchase drugs may accumulate. Before a purchase in the open market is made, records should be checked to make sure that a shipment of these same drugs is not about to arrive from the supply depot. Drugs piling up from two sources will soon create an unwieldy surplus.

The *Bureau of Supplies and Accounts Manual* prescribes procedures for preparing civilian pay rolls at nonindustrial activities. If these procedures are followed with modifications to meet local conditions, one full-time pay roll clerk should be capable of handling 200 pay roll accounts.

SUMMARY

1. The organizational pattern of the finance division should be standardized to consist of a procurement section, accounting section, pay roll section, and a stores and equipment section, directly responsible to the finance officer.
2. Officers who specialize in finance should not be rotated to other types of duty.
3. A qualified civilian storekeeper, if available, or a junior Medical Service Corps officer, should be placed in charge of the storerooms and held accountable for all material in stock.
4. The Kardex medical stores record system should be fully utilized by all hospitals. This should be located in the immediate storeroom area, rather than in the main finance office.
5. Responsibility for both stores and equipment should be assigned to the same organization unit—the stores and equipment section.
6. The requisition itself, if appropriately marked, is sufficient evidence of the receipt of an order.
7. Practical usage and realistic order point rates must be established and utilized in the ordering of supplies.

COMMISSARY DIVISION

The functions of this division are:

1. Selection and purchasing of food.
2. Organization and supervision of commissary personnel.
3. Keep accounting records of the cost.
4. Plan the menus.
5. Supervise the preparation of the food.

The commissary division is supervised by a Medical Service Corps officer designated as the commissary officer, who is directly responsible to the executive officer.

The internal organization of the commissary division is basically the same at all hospitals. The variations are due chiefly to physical layout. The following units generally constitute the division:

1. Office and supervisory staff
2. Storeroom
3. Main galley
4. Officers' mess
5. Special diet kitchen
6. Meat shop
7. Bake shop
8. Cart details
9. Nurses' mess

Special diet kitchens are under the supervision of Nurse Corps officers.

A separate mess for nurses is operated when justified.

The galley working force, within the continental limits of the United States, consists of civilians having various designations such as cooks, bakers, stewards, and mess attendants.

The use of hospitalmen in the commissary should be kept at a minimum. It should be restricted to chief hospitalmen and hospitalmen, first class, in supervisory job, and hospitalmen specifically assigned to police mess lines at certain hours. Hospitalmen should not be used as storeroom hands, diet kitchen helpers, etc.

All hospitals keep complete records of expenditures for provisions, inventories, cost per ration, etc. No attempt will be made to go into the procedural details as they are quite involved and complicated. It can be said, however, that the commissary division probably uses a greater variety of local forms than any other division.

From 15 to 20 percent of the total staff of a hospital are full-time commissary workers. The commissary is thus, by far, the largest functional unit. The payroll costs for commissary workers alone is from 70 to 90 percent of the cost of the food itself. In addition, much time is spent by ward hospitalmen and other personnel delivering food to bed patients.

The commissary is more a fixed cost or overhead operation than a direct charge. For any individual hospital, commissary cost per patient rises sharply as the patient load drops. Yet the size of the commissary staff varies greatly from hospital to hospital, in relation to the number of rations served a staff worker.

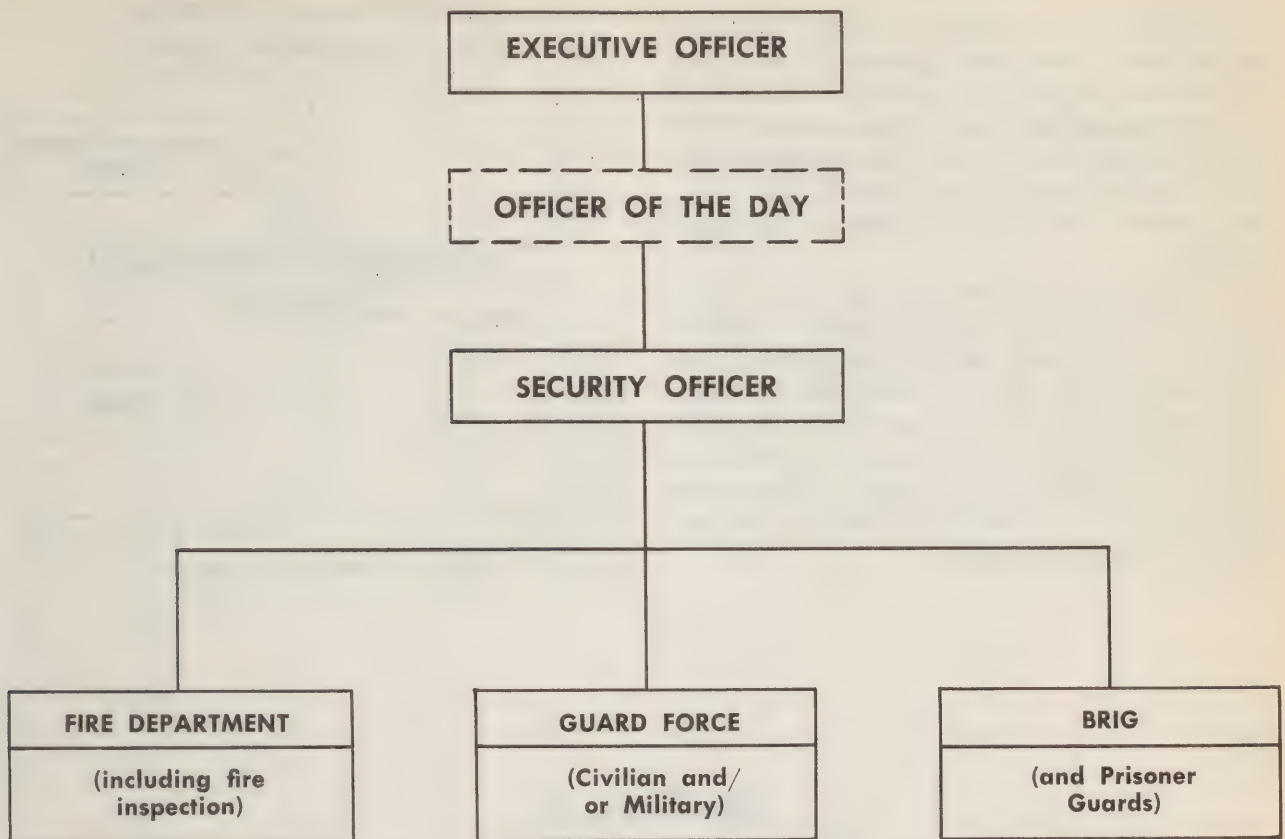
It can be seen that the physical layout of the commissary division is the controlling factor in determining staff requirements, which in turn, determines the quality and costs per ration.

SUMMARY

1. Wherever practicable, commissary facilities, should be consolidated with the general aim of providing all commissary facilities in one central location.

2. The use of hospitalmen in the commissary division should be restricted to chiefs and first class petty officers, in supervisory positions, plus those specifically assigned to police mess lines at certain hours. Hospitalmen should not be used as storeroom hands, diet kitchen helpers, and office clerks.

3. Separate nurses' mess cannot be operated economically for less than 40 nurses, or where the staff required is more than one commissary worker for five nurses.



Medical Service Corps Officer in charge designated as the security and disciplinary officer.

Figure 11. Ideal Organization Plan

SECURITY OFFICER

Functions of the security officer:

1. Supervision of the guard force.
2. Supervision of the fire department, including fire inspection.
3. Administration of brigs and supervision of prisoner guards.

A Medical Service Corps officer should be designated as security officer in hospitals having a census of more than 1000.

MAINTENANCE DIVISION

The maintenance officer shall have charge of all maintenance of offices, shops, and equipment, and supervise the duties of the fire marshal, be responsible for the maintenance and operation of the power plant, laundry, garage, and similar installations.

The technical aspects of safety should be the collateral duty of the maintenance officer.

The maintenance division usually includes these functions under the direction of a Medical Service Corps officer or preferably a Civil Engineer Corps officer:

1. Office force
2. Laundry
3. Transportation
4. Power plant
5. Shops
6. Grounds
7. Civilian janitors (where necessary)
8. Elevator operators (where necessary)
9. Safety (technical aspects only)

The organization pattern of the maintenance division generally should be limited as shown in figure 12.

OFFICE SERVICES

Miscellaneous office services, including telephone, communication, mimeograph, photostat, office supply, and messenger activities, are scattered in a number of our naval hospitals and located without evidence of advance planning. Apparently the main consideration has been to use any available space without regard for a central location which is easily accessible to all hospital activities.

To establish organizations unity and obtain better results, all office service functions should be consolidated in one unit which should be responsible to the administrative officer and be located near his office. All requests for office services from the operating activities should channel through this unit. This method will result in better administrative control of office services personnel, and a more complete utilization of the services provided by the hospital.

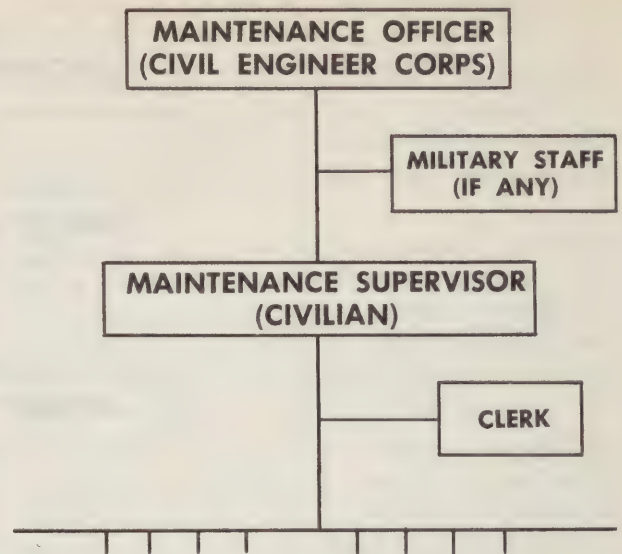


Figure 12. Maintenance Division

Section B

THE NAVAL HOSPITAL IN NAVAL HOSPITAL SHIPS

The naval hospital in a hospital ship embraces all persons attached to the hospital either for duty or for treatment.

All activities within the ship which are devoted to the care or treatment of the sick and injured, and all parts of the ship used by the medical department, including living quarters and stowage spaces for supplies and equipment, belong to the hospital.

There is a difference, however, in the limits of command. While the commanding officer of a shore based hospital is the commanding officer for all purposes, the officer in command of the naval hospital in a hospital ship is responsible only for the conditions and activities carried on within the hospital spaces. The commanding officer of the ship is responsible for the ship itself and the material upkeep and maintenance of its structure.

The commanding officer of a hospital ship normally limits the exercise of his command over the naval hospital to such military matters as discipline, security, in-

telligence, fire protection, communications, watertight integrity, stability, preservation and maintenance, and to coordinating the activity of the hospital with that of the ship.

With the exceptions as noted above, the commanding officer of the ship does not exercise control within the hospital, its administration or organization, the expenditure or accountability of funds allotted to the hospital, the assignment of personnel and duties, or the establishment of technical methods and procedures, unless such control has been specifically delegated to him by competent authority.

In comparing the naval hospital in a hospital ship with the naval hospital ashore, it will be found that the organization pattern is basically the same. A noteworthy exception is the difference in method of subsisting patients. In the naval hospital ashore all personnel and patients are subsisted by the hospital commissary, an adjunct of the administrative organization. In the naval hospital in a hospital ship, all classes of patients, other than those on special diets, are subsisted from the general mess of the ship. The general mess is under the control of the ship's supply officer and food is provided in the

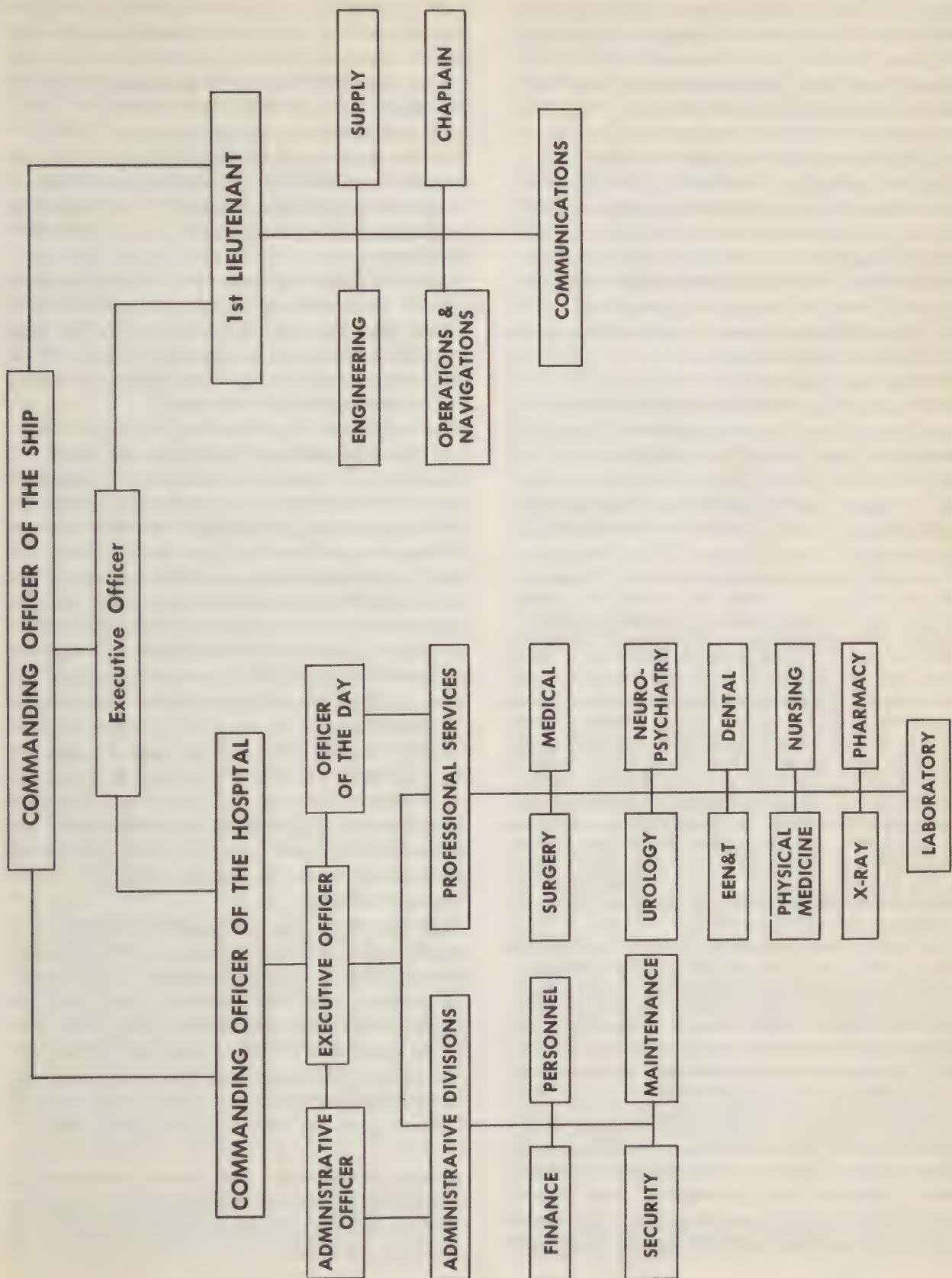


Fig. 13. Organization Chart of a Naval Hospital in a Naval Hospital Ship

form of prepared rations. Those patients requiring special diets are subsisted from the medical department diet kitchen. Items of provisions required by the medical department for special diet purposes are either drawn from the supply officer or procured from commercial sources by the supply officer and ultimately charged to the appropriation "Medical Department Navy."

The history of hospital ships is a long one. The earliest known references to possible hospital ships are to a vessel of the Athenian fleet (431-401 B. C.), the *Therapeia*, and to a Roman vessel, the *Aesculapius*. Records do not show these as actual hospital ships, but since both Greeks and Romans were accustomed to give their ships symbolical names, it is reasonable to assume that these ships were so used.

We need only go back two centuries to present a picture of the contrast between a hospital ship of the British Navy at the siege of Cartagena, and its modern counterpart. Tobias Smollett, an English novelist, was a surgeon's mate in Admiral Vernon's fleet during the siege of Cartagena in 1741. He left this vivid description of the sick and injured who survived the storming of Fort Lazar:*

"As for the sick and wounded, they were next day sent on board the transports and vessels called hospital ships, where they languished in want of every necessary comfort and accommodation. They were destitute of surgeons, nurses, cooks, and proper provisions; they were pentup between decks in small vessels where they had not room to sit upright; they wallowed in filth; myriads of maggots were hatched in the putrefaction of their sores, which had no other dressing than that of being washed by themselves with their own allowance of brandy; and nothing was heard but groans, lamentations, and the language of despair, invoking death to deliver them from their miseries. What served to encourage this despondence was the prospect of those poor wretches who had strength and opportunity to look around them; for they beheld the naked bodies of their fellow soldiers and comrades floating up and down the harbour, affording prey to the carrion crows and sharks which tore them to pieces without interruption, and contributing their stench to the mortality that prevailed.

"This picture cannot fail to be shocking to the humane reader, especially when he is informed that while those miserable objects cried in vain for assistance, and actually perished for want of proper attendance, every ship of war in the fleet could have spared a couple of surgeons for their relief, and many young gentlemen of that profession solicited their captains in vain for leave to go and administer help to the sick and wounded. The necessities of the poor people were well known; the remedy was easy and apparent; but the discord between the chiefs was inflamed to such a degree of diabolical rancour that the one chose rather to see his men perish than to ask of the other, who disdained to offer his assistance unasked, though it might have saved the lives of his fellow subjects."

The deplorable state of the Royal Navy's hospital ships presented in the foregoing quotation, when compared with our modern all air-conditioned hospital ships, gives us an excellent idea of the great progress that has been made in this phase of naval science.

The early discussions of hospital ships in the American Navy appear in the writings of Surgeon Edward Cutbush about 1808; he mentions the possibilities of hospital ships, probably as the result of observations on his Mediterranean cruise during the war with the Barbary States.

In the *Rules and Regulations for the Navy* published in 1818, there were six rules for the government of hospital ships; but at the time no actual hospital ships had been commissioned or projected. The American Navy apparently had no regular classified hospital ships until the outbreak of the Civil War.

The evolution of the modern hospital ship was essentially a slow development. During the early days of our Navy the store ships served in the double capacity of store and hospital ships. They were variously spoken of as store, depot and supply ships, and sometimes as health or hospital ships. There have been many of these, and some have left excellent records of the care of the sick and injured. The most famous ships of this class were the *Jamestown* and the *Idaho*. The former was ordered to Ireland by a special act of Congress, with a supply of food to relieve famine. She later served as a store and hospital ship off Panama during a yellow fever epidemic.

The *Idaho* was a screw sloop of 1,837 tons, launched in 1864. She was equipped with hospital stores and equipment after the Civil War and ordered to the Far East to serve as a hospital ship for the China Squadron. In 1869 she was badly damaged in a severe typhoon and rendered unfit for sea service, but was subsequently utilized as a stationary hospital ship at Nagasaki, Yokosuki, and Yokohama.

The Civil War marks the period in which the most progress was made in the evolution of the modern hospital ship. Many types of such vessels were developed and used during the Civil War by the Army, Navy, the U. S. Sanitary Commission, Western Commissions, and by state governments. They included floating hospitals, river steamers, ambulance ships, liners, and sailing vessels. They operated up and down the Atlantic, the Gulf of Mexico, and the Mississippi and other navigable rivers.

Sanitary commissions.—The sanitary commissions of the Civil War era were the immediate predecessors of the Red Cross in their mission of scouting the needs and bringing relief to sick and injured of the military and

* Tobias Smollett, *Miscellaneous Works*, Edinburgh, 1806, IV, 445-469. Quoted from, Fielding H. Garrison, *Notes on the History of Military Medicine*, Washington, Association of Military Surgeons, 1922, p. 151.

naval forces. The first of these, the U. S. Sanitary Commission, was established by order of President Lincoln, dated 13 June 1861. It was composed of eminent civilian leaders in the fields of medical and sanitary science and philanthropy. Under the sponsorship of the War Department, this commission was given broad powers to explore the needs of the armies in the field, to recommend medical and subsidiary policies to the Government, and to organize the civilian elements of the population to render aid to the troops.

Soon the various states of the north organized state sanitary commissions, and these were supported by other commissions and chapters in the cities, towns, and villages. In St. Louis, General Fremont decided that the Western Department required an independent commission, so he issued authority for the establishment in St. Louis of the Western Sanitary Commission.

These sanitary commissions sent investigators out into the field to find out just what the Army needed to handle the field problems of the medical department. A committee charged with that responsibility made specific recommendations to Congress—and then went to work with donated funds, supplies, equipment, and time to help the Army and Navy carry out its recommendations.

Various naval documents and correspondents list a number of hospital ships during this period. The most famous of these was the USS *Red Rover* captured from The Confederates at Island No. 10, in the Mississippi, and converted into a hospital ship for the Navy at St. Louis by Quartermaster George D. Wise. With the help and advice of the Western Sanitary Commission, Wise made a floating palace of her, as is evidenced by his letter to Commodore A. H. Foote on 12 June 1862:

"My Dear Commodore: I wish that you could see our hospital boat, the *Red Rover*, with all the comforts for the sick and disabled seamen. She is decided to be the most complete thing of the kind that ever floated, and is every way a decided success. The Western Sanitary Association gave us in cost of articles \$3,500. The ice box of the steamer holds 300 tons. She has bathrooms, laundry, elevator for the sick from the lower to the upper deck, amputation room, nine different water closets, gauze blinds to the windows to keep the cinders and smoke from annoying the sick, two separate kitchens for sick and well, a regular corps of nurses, and two water closets for every deck.

All the comforts of home. What more does a sailor want?"

The *Red Rover's* first big mission after being put into commission, with Asst. Surg. G. H. Bixby, USN, in charge, was to run down the Mississippi below Memphis,

to take aboard the wounded from an explosion on the *Mound City*. By 23 June, 112 had already died, and many others were not expected to survive their wounds.

From then until the end of the war in the West, the *Red Rover* was in the thick of the fighting. Her log shows that she actually took part in two engagements, 27 April 1864 and 3 May 1864, but whether she actually unlimbered her 32-pounder does not appear. At this time George H. Bixby was her senior medical officer, and Ninian Pinckney was the surgeon of the fleet.

She cruised up and down the Mississippi, making many trips from the lower reaches with patients which she transferred to northern hospitals. Her log shows that over a period of 2 years and 10 months, 1863-65, she admitted 1,697 patients, of whom 157 died. "Climatic influence" seemed to be the prevailing cause of many of the patients being admitted from vessels of the fleet.

This old wood-burning side-wheeler was, so far as available documents can tell us, the first of the naval vessels to be designated, equipped or commissioned as a hospital ship during the Civil War.

The quoted letter to Commodore Foote plainly indicates the considerable progress made in the development of hospital ships since Admiral Vernon's fleet was at Cartagena.

The Spanish-American War brought further advancements and utilization of hospital ships. The records show that a total of seven ships of various types were converted into hospital and ambulance ships. Of this group the *Relief* and the *Solace* rendered long and distinguished service throughout World War I.

There have been three *Reliefs* used as hospital ships. The first, commissioned in 1836, was the first store ship authorized by act of Congress. She served as store ship to the Brazilian Gulf, Mediterranean, and Pacific Squadrons. Doubtless, in this capacity, she served as one of our hospital ships in the Mexican War. She was still in service during the Civil War. Although decommissioned in 1863, as late as 1875 she was still serving as the Receiving Ship at Washington, D. C.

The second *Relief* was purchased by the War Department in May 1898, and made regular trips between the West Indies and the Army hospital center at Montauk Point. After the Spanish War she was ordered to the Pacific and served there during the Philippine Insurrection and Boxer Uprising. After three years in the Far East she returned to the West Coast and was decommissioned at Mare Island Navy Yard in 1902. In the spring of 1905 she was completely refitted as a Navy hospital ship. She went into commission in February 1908 with a medical officer in command, the first of

our hospital ships to be commanded by a medical officer. She ended her days as a station hospital at Olongapo. When the keel was laid for the third *Relief*, in 1917, her name was changed to *Repose* and she was finally scrapped in 1922.

World War I saw the first actual construction of a hospital ship in the American Navy from the keel up. The Bureau of Medicine and Surgery had had such a ship in mind since 1911. The construction of the third *Relief* marked a new era in hospital ships service. The *Relief* did not take her place with the fleet until the winter of 1920. It remained for the old *Solace* of Spanish-American War days, and two converted passenger liners, the USS *Mercy* and USS *Comfort*, along with other smaller vessels utilized as auxiliaries, to serve the fleet as hospital ships. These ships, while lacking the modern design and facilities of our latest class of hospital ships, were adequate and rendered excellent service throughout World War I.

The *Solace* purchased by the Navy for service in 1898, was the first American naval hospital ship to fly the Geneva Red Cross flag.

World War II saw the ultimate in design and construction with the so-called *Haven*-class hospital ship. Six ships were commissioned: the USS *Haven*, USS *Tranquility*, USS *Benevolence*, USS *Repose*, USS *Consolation*, and the USS *Sanctuary*. They represent the culmination of years of experience and nearly a year of painstaking planning to produce the finest hospital ships afloat for any Navy in the world. That such planning has been successful is beyond any question. Medical officers who have had tours of duty aboard hospital ships are unreservedly enthusiastic about the new ships and declare them the equal, in equipment and design, of many shore establishments within the continental limits.

No description of the new ships can do justice to the ingenuity and concern with detail that went into the planning. For example, each dressing room attached to the wards contains a dressing-room table so designed that it may be used for applying dressings, as an emergency operating table, or as a work table; and when not in use it may be folded against the bulkhead. Each dressing table is lighted by a standard operating-room light. In any engagement such as at Iwo Jima, when casualties are concentrated in a short period of time and high explosive wounds predominate, these dressing rooms may be utilized as emergency operating rooms.

The ships were designed as "floating hospitals" and therefore their capacity exceeds that of any other Navy hospital ship by several hundred beds. Permanent wards allow for 802 patients—742 enlisted men and a capacity of 60 for sick officers. However, the number of beds

may be expanded to handle 1,000 patients whenever the need exists.

Each ship displaces 15,000 tons, has seven decks and an over-all length of 520 feet. The beam is 71 feet 6 inches. Each has a speed of 17½ knots and a cruising radius at that speed of 12,000 miles.

The turbines, the single stack and all machinery for operation of the ship are located aft with the forward compartments devoted to the medical department. Thus, all sections of the medical facilities may be reached through continuous corridors, an important traffic factor in times of heavy action. The compact design of the medical section is not even broken by the customary large cargo trunks dropping from the well decks to the hold. The two supply trunks are continuous from the well decks to the storage holds and the outlet for the forward trunk opens into an area bounded by the entrances to the various medical supply compartments and cribs. The after trunk drops into the refrigeration and dry stores compartments, a deck below the galley.

Quarters for medical department personnel are located below the waterline allowing the upper decks for wards and broad outside recreation spaces. However, the usual discomforts of below-decks quarters have been eliminated by the existence of complete air-conditioning throughout the ship, the first time any Navy ship has been 100 percent air-conditioned. Each ward and each compartment has its individual thermostatic control of the air-conditioning within its confines. The entire installation is a four-unit interchangeable system. In addition, the ventilation is on a separate fan system so that, if the cooling apparatus breaks down for any reason, the ventilating supply may be maintained.

Surgical suite.—As an example of utilitarian design, examination of the surgical suite reveals a number of features not found in any other previous hospital ship. For one thing, the entire surgical suite is located on the second deck, at the metacenter of the ship where movement from "pitch" or "roll" is at a minimum.

The surgical suite may be reached from all decks by means of two elevators and two sets of ladders. The elevators and ladders both feed all decks. The elevators each have a 3,000-pound capacity and are large enough to accommodate a standard litter and two or three attendants. The ladder wells are large and the angle of incline reduced so that a litter may be carried with ease at an even level. The ladder landings are wide enough to allow turning the litter without hoisting it above the rails.

It will be noted in the reproduced floor plan that the surgical suite is actually a dual installation. Forward are the operating facilities and aft are the units utilized both

by the operating units and the wards. In other words, the continued use by the wards of the dispensary, central surgical supply, and the clinical laboratory is possible

even while the flow of casualties requiring surgery is heavy.

SURGICAL SUITE

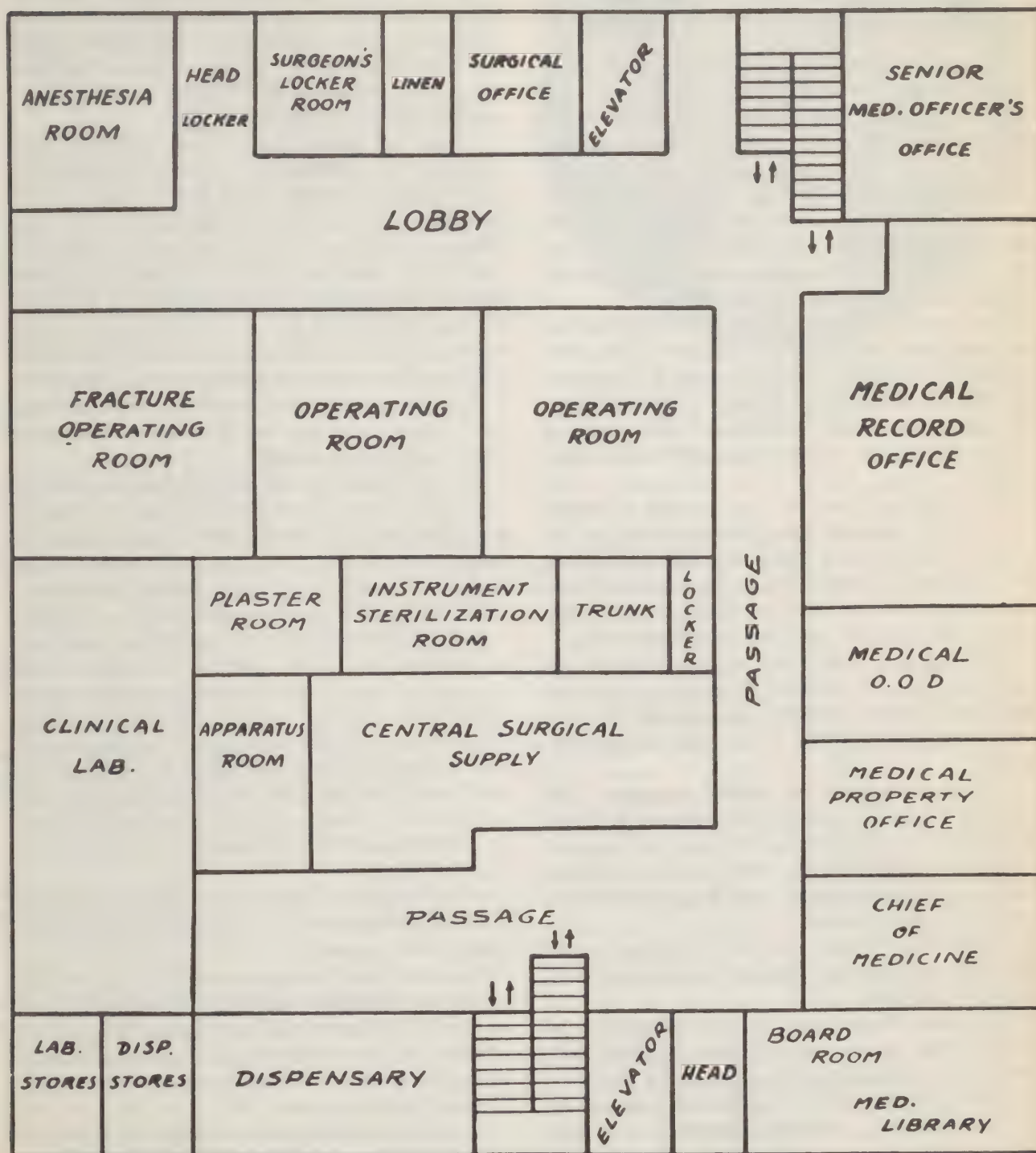


Figure 14. Floor Plan of a Hospital Ship

Casualties may be brought down the forward elevator or ladders, taken directly to the anesthesia room and then across the lobby to the operating rooms or the fracture-operating room. The plaster room opens into the fracture-operating room, the center operating room, central surgical supply and the instrument-sterilization room. There is ready access from central surgical supply to all rooms in the unit.

The apparatus room is an innovation, indicating the careful thought given all aspects of the hospital ship's problems when far from the sources of supply. It will be noted that the apparatus room is bounded by central surgical supply, the plaster room, and the clinical laboratory. All autoclaves and heating equipment, in each of the three sections, are placed in the bulkheads surrounding the apparatus room. The rear bulk of this equipment may be reached in the apparatus room, greatly simplifying problems of maintenance and repair.

The central surgical supply has two autoclaves, one extremely large which can be rolled out of the steam compartment on tracks and thus be used in the heaviest weather without danger of scalding. In addition, surgical supply has a hot-air sterilizer, as well as dustproof counter tops and the standard equipment found in shore hospitals.

The operating rooms, too, have unusual equipment in a specially designed light hung on tracks the full length of the operating tables. The light may be run back and forth to concentrate on any position desired. The position of the operating table may be varied quickly and gently by use of compressed air power.

Below the surgical suite, and with approximately the same floor plan, are the various X-ray, radiographic, and fluoroscopic rooms, the optical shop, the EENT clinic, dermatology clinic, dental clinic, and physiotherapy rooms.

Each of these units has standard equipment. The EENT clinic has its own operating room and a 20-foot refraction alley. The physical therapy unit has two whirlpools adaptable for all extremities, two diathermy machines, two massage tables, a sitz bath, and both ultra-violet and infrared lamps.

The dental clinic has three units, as well as its own X-ray and darkroom equipment and a dental prosthetics laboratory adjoining.

The wards.—In equipment, the wards aboard the new hospital ships surpass those of shore hospitals. Each bunk has a reading lamp and a five-channel radio connection within reach of the hand. Patients have a choice of radio programs, educational programs on a time-schedule basis over one of the channels, church services

or the ship's own entertainment program. The wards are serviced with reading material from the ship's library. Each bunk also has its own locker.

The dressing rooms are used as doctor's offices and contain the ward records, as well as instrument sterilizers and other standard equipment. The utility rooms have full-size rim-flushing sinks, steam bedpan sterilizers, racks and, in the isolation ward utility rooms, special genitourinary sterilizers have been installed. The heads are equal in capacity to those installed in regular Navy wards of the temporary-building type.

In the diet pantries entirely new design and new equipment have been evolved. A special food system has been inaugurated for the wards. Food is sent up from the galley to central points on the main deck by food elevators. It is placed in interlocking, vacuum containers which fit in two-wheel, rubber-tired food carts. Either three or five containers may be transported to the wards on these carts and the containers fit into an electrically heated cabinet in the diet pantries. Food is dispensed on folding bed trays which may also be used as bed tables.

The diet pantries have automatic, rotary toasters, fixed dish-racks, refrigerators, dish-washing equipment, and a small garbage grinder.

All lower bunks in the EENT ward are standard Gatch beds while the orthopedic ward has two fracture beds, complete with overhead frames. The four isolation wards are blocked by doors from other sections of the deck and a nurse's station in the dividing corridor enables duty personnel to oversee traffic between the wards.

Galleys.—The enlisted men's mess hall is directly aft of the ship's main lobby. Tables are collapsible so that the mess hall may be used for movies or other recreational events. A cafeteria system is used and mess starts from the port side, and works around the periphery of food counters to the starboard side of the mess hall. The port ladder into the mess hall is used for incoming traffic while the starboard ladder is for finished diners. Trays are disposed of in the scullery at the foot of the starboard ladder.

In the scullery is a huge garbage grinder that chops up waste and disposes of it by flushing it through the ship's sanitation system.

The main galley is supplemented by a separate diet kitchen for special diets and has all the equipment common to the galleys of the most modern hospitals. In addition, the food equipment aboard includes two milk reconstituting machines—milk emulsifiers with a capacity of 40 gallons an hour.

All refrigeration equipment is located just below the galley in the stores deck. This includes a 1,000-cubic-foot

quick-freeze compartment, ice-cream machinery with sufficient capacity to supply the crew as well as full census of patients. Biologicals also are stored in a special compartment of the refrigeration installation.

Medical storage.—Each ship has approximately 85,000 cubic feet of medical storage space divided by wire gratings into compartments. Narcotics and acid lockers of unusual size are separated from the main storage compartment by heavy bulkheads.

The storage compartments have a height of 8 feet and special racks and shelving for various types of containers. The field hospital has a special compartment of its own where it is kept intact and packed, complete with supplies, cots, and litters. It is stored directly off the forward trunk outlet and can be hoisted on deck and over the side in a matter of a few hours. Equipment for a 100-bed field hospital is stored so that it may be promptly unloaded in accord with a prearranged plan, allowing immediate setting up ashore without delay.

Handling patients.—Embarkation and debarkation of patients has been planned for highspeed, mass transferrals.

Boarding ladders, for instance, have a width of 40 inches, allowing two-lane traffic. They feed into the two main lobbies at main-deck level alongside the ambulatory wards. These wards each contain a shock room. As patients are brought aboard from the dock, they are distributed from the main lobby to the elevators, stairs, or shock rooms. Entry to these lobbies is through an especially wide, light-proof door leading from the main deck promenade.

These doors also are utilized for receipt of patients brought aboard by means of the ingenious hoists, designed especially for these ships from an original manually operated whip-action hoist devised aboard the USS *Bountiful*.

The hoists in the new ships are power-operated and are controlled by one man at the rail who has full vision of the litter from loading until it is swung aboard. This improvement eliminates the need for a signalman at the rail to direct the operator of the winch.

There are five hoists, each with an 8-foot boom, at each side of the ship. They are mutiple-litter hoists, capable of raising 500 pounds at a speed of 150 feet a minute.

In addition, double-type Welin davits are located forward on both sides of the main deck. Thus power-boats loaded with patients may be hoisted to rail level or onto deck cradles and unloaded directly onto the



Figure 15. Insignia of a U. S. Navy Base Hospital in the South Pacific

deck. It is planned to provide specially designed ambulance boats for this purpose.

Thus, it may be seen that shore-to-ship, ship-to-ship, and small boat-to-ship, loading and unloading of patients is possible simultaneously at all strategic points on the ship's main deck.

Also, with two main distribution points and shock rooms nearby, emergency operating rooms on each deck, three fully equipped operating rooms on the second deck, and another operating room in EENT, it is possible for all types of casualties to receive proper medical care within minutes of reaching the ship.

This important service and the entire operation of the medical department aboard will be aided by an intercommunication system reaching all units. The medical intercom system may be cut into the ship's intercom system for announcements, emergencies and the like.

Recreation.—The life of the ship is centered about the main lobbies, which are lounges, while the ship is not in action. The ship's service store is located in the after lounge, as is the ship's library, and the chaplain's and Red Cross offices.

The broad expanse of the bridge deck, aft of SOQ, may be used for movies, games, shows, or sun-bathing.

Each ship has a medical department complement consisting of 17 medical officers, 30 nurses, and 238 hospital corpsmen.

As stated previously, for the purpose of administration there is basically very little difference in a naval hospital ashore and the naval hospital afloat. Like his prototype ashore, the medical officer nominated to command a hospital ship is the titular administrator of such facilities. He has full management control over Medical, Hospital, and Nurse Corps personnel, and all personnel admitted as patients in the hospital. He is responsible for medical material and stores which come under technical control of the Bureau of Medicine and Surgery. In

short, he is fully responsible for the proper function of his organization as a hospital.

The essential distinction in the two commands is that of military authority. The medical officer in command of a naval hospital ashore has full military authority. He enforces discipline and dispenses punishment, when necessary, to patients and all personnel attached to the hospital. Military authority of a hospital in a hospital ship is delegated to the commanding officer of the ship, who is an officer of the line.

Section C

BASE, FIELD AND MOBILE HOSPITALS

Base, field or mobile hospitals are medical facilities similar to other hospitals except that they can be readily disassembled and moved from one point to another, as necessary, to meet emergency conditions. They are fully equipped with all facilities necessary to render medical support to a fleet or Marines in the field, or to any emergency medical service.

The physical structure of the buildings is accomplished by the use of Quonset, Butler, or similar prefabricated sections that can be assembled into any size or arrangement to meet requirements. The materials used in these buildings are tested to withstand climatic conditions, war conditions, depredation by rodents, and to prevent the entrance of vermin, and flies, mosquitoes and other insects. The sections are especially packed, numbered, loaded, and shipped in a manner to facilitate the setting up of a medical activity.

Special methods of supply and equipment are planned to supplement original commissioning outfits. Code numbers and names are used as designations.

Chain of command.—The Joint Chiefs of Staff control the over-all integrated strategic plan of warfare operations, specify the target, the time it is to be approached, and define, in broad general terms, the objective of the mission and the size of the installation to be built. These specifications are passed to the area commander in the form of general orders, ranging in detail from a brief dispatch to comprehensive instructions. The base commander receives his orders from the area commander. Thus, through the chain of command, orders reach the medical officer in charge.

Planning division.—In conjunction with the over-all planning of advance bases it is the responsibility of the assistant chief of the Bureau of Planning and Logistics to maintain liaison with other planning boards in regard to basic war plans.

Packaging and shipping.—A senior medical officer, ordered to report to a specific assembling or embarkation point, may find a complete unit awaiting him. A unit may be designated by a code name such as "Goat," which would indicate a 500-bed mobile hospital as part of a base component. This includes equipment, supplies, and personnel. Officers are given instruction as to type of structures required, method of numbering parts, and procedure of construction. Some ships are designed to accommodate specific components so that every unit can be fitted properly into the space provided, thus facilitating the move in progress.

In the loading of a ship, the first pieces stowed will be the last removed. Therefore particular attention is necessary to the order of stowing so that equipment and material needed first can be removed first. In order to facilitate handling, the size and the weight of packages are limited.

Medical and dental supplies are packaged in units ranging from first-aid kits to sufficient material to equip a base hospital. These units are waterproofed to withstand exposure for several weeks and are designed to protect material under all conditions. (See figure 19, p. 69.)

Materials are classified by numbered units and segregated by consistent methods to permit rapid and proper distribution.

The presence of a Supply Corps officer will facilitate



Figure 16. Aerial Photograph of Base Hospital #15, Manus Island

the transfer of materials to and from ships, permit open purchase of required materials, facilitate the drawing of much needed clothing for the men, and establish a definite source of supply for provisions and materials. By working with, or observing the functioning of, a supply officer medical personnel are furnished an opportunity to learn supply corps procedures in procurement and logistics. These procedures are often required of medical department personnel in the field.

Selection of a site appropriate for a hospital.—The base commander is responsible for the selection of the site for medical quarters, but it is the responsibility of the senior medical officer to recommend suitable sites.

Efforts should be made to establish base medical facilities on sites well removed from strategic base installations that might be subject to enemy attack. The size of the facility governs the area required. As soon as practicable, all-weather roads should be constructed to connect the hospital facilities with airfields and docks to insure rapid and easy transfer of patients. As high an elevation as terrain and military conditions permit should be selected, with an adequate supply of potable water available. Advantage should be taken of any natural covering with as little destruction to existing shade and screening as possible. The site should be well drained, or with a possibility of being well drained, and away from mosquito-bearing areas.

Layout of buildings.—The chief of the medical unit involved consults with the commander of the base as to the location and number of buildings required for the facility being installed. Prefabricated buildings lend themselves readily to various-sized accommodations. Typical buildings for each type of facility, varying only in size and number are:

Wards.

1. Medical and surgical
2. Contagious diseases and observation
3. Psychopathic (locked and open)
4. Sick officers' quarters

Operating buildings (including dental suites)

1. Laboratories
2. Subsistence buildings
3. Administration
4. Recreation facilities

Personnel Buildings.

1. Officers' quarters
2. Nurses' quarters.
3. Hospital Corps' quarters.

Refrigeration.

1. Food.
2. Films.

Miscellaneous.

1. Powerhouse (for heating and generating equipment).
2. Laundry.
3. Storehouses (general and medical).
1. Shops.
2. Incinerator.
3. Disinfection.
4. Mortuary.



Figure 17. General view of Mobile Hospital #1, Bermuda

The personnel required to operate a base hospital is approximately 100 percent of bed capacity because of the other necessary activities involved. When possible, water supply should be developed to provide 100 gallons per capita per day. Electrical power required will approximate 50 percent of bed capacity in KVA. Dispensaries should be located close to the living quarters of the units they serve in order to relieve the pressure on the main medical installation. Field and base hospitals require the same dispersion and concealment as other building groups. Air-raid shelters should be provided to which ambulant and stretcher cases can be taken.

Problems of housing, feeding, disposal of waste, fire and malarial control are of prime importance and should be solved quickly. The problem of morale is a real one at every station and an adequate recreation program should be instituted.

Hospital facilities.—Base, field, or mobile hospitals may be described administratively as overgrown dispensaries. In base and mobile hospitals the medical officer in charge is designated as the medical officer in command. In a field hospital he is designated as the division



Figure 18. Layout of Buildings of U. S. Navy Base Hospital #15

KEY TO MAP OF HOSPITAL GROUNDS

OFFICES

- A1—Master-at-Arms and Staff Personnel Offices.
- A2—Disbursing Office.
- A3—Patient Personnel Office.
- A4—Executive and Commanding Officers' Offices.
- A5—Officer-of-the-Day's Office.
- A6—Chief Nurse, Chief of Medicine and Chief of Surgery.
- A7—Pharmacy.
- A8—Dental Office.
- A9—Medical Record and Evacuation Office.
- A10—Laboratory.
- A11—Malaria Control and Morgue.
- A12—Chaplain's Office and Chapel.
- A13—Red Cross Building.
- A14—Recreation Building.
- A15—Post Office.
- A16—Ship's Service Store.
- A17—Ship's Service Storeroom.

BARRACKS

- Capt.—Commanding and Executive Officers' Quarters.
- 01-08—Officers' Quarters.
- C1—Chiefs' Quarters.
- C2-C29—Enlisted Personnel Barracks.
- M1-M3—Bag Rooms.
- M4-M5—G.S.K. Storeroom and Issue Room.
- M6—Transportation and Electrical Shop.
- M7—Carpenter Shop and Maintenance.
- M8-M9—Medical Warehouses.
- M10—Laundry.

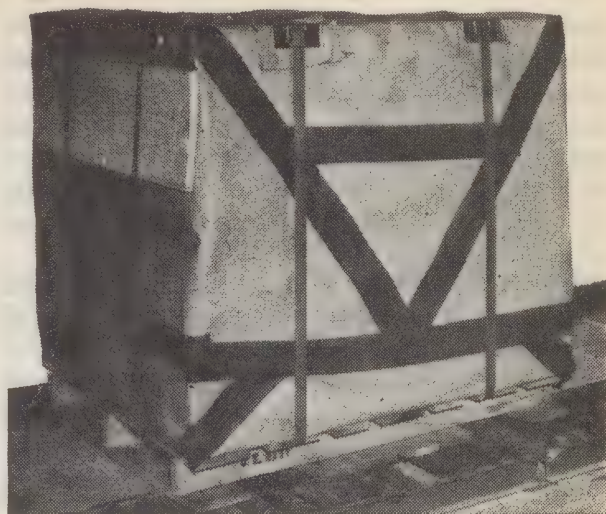


Figure 19. Waterproofed medical unit load properly strapped and sealed. Secured to a "pallet" this unit was capable of being towed up on the beach during the attack as one complete unit.

surgeon. These hospitals are not permanent establishments.

Professionally, they have all the facilities of a permanent naval hospital. In most instances they are completely manned and maintained by military personnel.

Architecturally, they are usually constructed of prefabricated units and vary in size from 50- to more than 1,000-beds. Size is determined by the planning division and is estimated in proportion to the force to be served.

Base hospitals were the largest of the extracontinental hospitals during the last war. They were constructed in rear areas, as more permanent installations than the smaller facilities, to receive patients from field hospitals. Capacities ranged from 1,000 to 1,500 beds. In some instances they were expanded to accommodate over 2,000 patients. Patients who could be returned to duty in a few months were retained. Those needing more time to recover, or those who were incapacitated for further service, were returned to the United States where appropriate treatment could be administered.

Administrative duties are the same as in continental institutions as far as conditions allow and ingenuity can overcome shortages.

The first base hospital established in the South Pacific was Mobile Hospital 4, at Auckland, N. Z., early in the summer of 1942. The medical force consisted of 18 medical officers, 2 dental officers, and about 300 corpsmen. All except two of the officers were Reserves called to active duty. Although they were all specialists in their line, it was not evident in the first few weeks

after their arrival. They assisted with the unloading of supplies, drove vehicles, struggled with the blueprints which accompanied the prefabricated housing, and helped to erect their own facility. That they built and operated to good effect is evident from their record of 16,000 patients, with but 10 deaths, in the first year of operation. The hospital was moved several times as the war progressed.

Field or Mobile hospitals were established in forward areas during World War II for patients who required from 3 to 4 weeks for recovery before being returned to their units are reassigned. Capacities usually ranged from 200 to 1,000 or more beds. Patients needing further treatment than could be given at such a facility were transported by ship or plane to base hospitals, or returned to the States.

Air evacuation of wounded by the Navy during the last war was first attempted by a group of 15 corpsmen stationed in Ireland. The first trip across the Atlantic was made on 1 August 1944 without flight surgeon or nurse. Over 1,100 patients were returned from Ireland and North Africa in this fashion without serious mishap. Experience gained through these early flights over the Atlantic led to the fully equipped hospital planes which made so many trips to such good effect over the far reaches of the Pacific. Hospital planes equipped to carry from 12 to 20 patients, with especially trained flight surgeons, nurses, and corpsmen, have become an integral part of the Navy Medical Corps.

Special Problems.

1. In planning admission rooms, consideration must be given to both professional and administrative functions. In order to handle the estimated peak load of casualties efficiently, these sections should be arranged so that the movement of patients to X-ray service, to the operating room, or back to the ward can be accomplished with a minimum of stretcher transportation. Enclosed passageways should be provided for protection from the weather.

2. Concrete loading ramps large enough to accommodate several ambulances at one time should be provided.

3. Storage spaces and maintenance buildings should be scattered for natural military protection.

4. Supporting services should be located so as to be able to render all possible assistance at all times.

5. Sufficient emergency exits should be provided for all wards.

6. In allotting space for psychiatric wards special attention should be given to:

- a. Providing sufficient private interview and



Figure 20. Air evacuation

treatment rooms for both in-patients and out-patients.

- b. Well-ventilated locked wards.

- c. Fenced areas to provide sunshine and recreation areas for locked ward patients.

- d. Wards should be located far enough away from the main hospital compound to afford privacy to patients and to spare them the sight of in-coming casualties.

To meet the needs of the service, especially in wartime, the seemingly impossible has to be accomplished with the materials and personnel at hand.

Because of shortages, terrain, or military requirements, military equipment available to a particular base at a particular time may not be adequate. The medical department personnel can and will rise to meet all emergencies. The ingenuity and initiative of Americans is known the world over and the Medical Department, in all past emergencies, has earned a resounding "well done!" This is because its members have the know-how and make use of it.

Dispensaries.—At all naval shore establishments the medical facilities that provide for the immediate temporary care of the sick and injured are designated dispensaries, and are usually located in suitable buildings.

Two such installations, directly under the technical and management control of the Bureau, have been officially designated as U. S. Naval Dispensaries: Navy Department, Washington, D. C.; and Long Beach, Calif.

Large dispensaries, such as those at naval shipyards, naval training stations, naval air stations, Marine Corps bases, etc., are under the officer of the Medical Corps, assisted by medical officers, nurses, and hospital corpsmen. At smaller activities there may be one or more medical officers, assisted by hospital corpsmen.

Their work ranges from routine physical examinations to surgery; patients include Navy and Marine

Corps personnel, their dependents, and civilian workers.

There are two broad categories of dispensaries:

1. A sick-bay type which provides beds or wards that may be utilized for temporary bedside care of patients. They are usually located some distance from permanent hospital facilities and are equipped to handle immediate traumatic surgical emergencies and medical cases not too seriously ill.

2. Clinical-type dispensaries which are not equipped for bedside care. They are usually adjacent to or near hospital facilities and perform routine examinations, give inoculations, chest X rays, and treatments for occupational trauma.

The over-all organization pattern for dispensaries is the same as that for naval hospitals. Any difference lies in individual dispensaries which vary in type, size, and location in relation to the command of which they are a part. Subdispensaries submit reports to, or via, the main dispensary.

Rations, maintenance, general stores, and transportation are the concern of the command. Medical supplies and equipment are supplied by the Bureau. Accounting and financial reports are accomplished as set forth in the *Manual of the Medical Department*, and submitted via the officer commanding.

Section D

NAVAL MEDICAL SUPPLY DEPOTS

Joint Army—Navy Medical Procurement.—Pursuant to requests from the Secretary of the Navy and the Under Secretary of War, the respective medical departments submitted detailed plans for joint operation and procurement of all medical and surgical supplies and equipment in June and July 1945. As a result of these reports the Army-Navy Medical Procurement Office was established in December of that year.

In the development of joint activities six divisions have been created:

1. Materiel Standards Division:
 - Catalog Branch.
 - Specifications Branch.
 - Laboratory Branch.
2. Purchases Division.
3. Administrative Division:
 - Fiscal Branch.
 - Transportation Branch.
 - Office Services.
 - Military Personnel.
 - Civilian Personnel.
 - Management Engineering Office.
 - Legal Office.
4. Medical Technical Maintenance Division:
 - Shop Branch.
 - Publications and Requirements Branch.
 - Operations and Training Branch.
5. Engineering Development Division:
 - Chemical Engineering Branch.
 - Electrical Engineering Branch.
 - Mechanical Engineering Branch.
 - Laboratory.
 - Shop.

6. Industrial Mobilization and Procurement Planning Division.

In the process of combining activities the Army Medical Catalog Branch was moved from Washington, D. C. to New York City, and the Navy Medical Department Catalog Branch was transferred from Brooklyn, to the same address. A new *Army-Navy Catalog of Medical Materiel*, issued 1 October 1947, incorporates the material requirements and specifications of both services and contains over 90 percent of common items. Wherever possible one contract is let to cover the needs of both services, although there are instances where one service only requires certain items, such as for the veterinary class which is utilized by the Army.

The Purchases Division, jointly staffed, is a combination of the Army Medical Purchasing Office, the Materiel Division of the Bureau of Medicine and Surgery, and the Navy Purchasing Office of the Bureau of Supplies and Accounts.

In the more than three years of operation the uniting of activities has demonstrated the advantages originally claimed and has proved its efficiency.

The agency operates under the supervision of the Surgeon General and the Munitions Board in formulating policy. The commanding officer is from one branch of the service and the executive officer from the other.

CENTRAL SUPPLY DEPOT

The office of the Chief of Materiel Division (MatDiv) is located in the Bureau of Medicine and Surgery. However, the office of the Director of the Materiel Division is located in the Naval Medical Supply Depot, Brooklyn, New York. The various functions of the divisions cover: requirements, procurement, inspection, warehousing,

stock control, accounting, and administration. MatDiv is the central receiving and distribution unit for all medical stores requisitions submitted by ships, hospitals, shore stations and other activities. It is under the military command and coordination control of the Commandant, Third Naval District. A central accounting system is maintained for all medical supply depots and storehouses.

FIELD DEPOTS

Supplies for medical and dental facilities east of the Mississippi River and the Atlantic area are obtained from the supply depot at Brooklyn. Activities west of the Mississippi and the near Pacific area, are supplied from the depot at Oakland, Calif. The far Pacific areas are supplied from depots at Pearl Harbor, T. H., and Guam, M. I.

Emergency storehouses and supply ships.—Medical supply storehouses are presently located at Norfolk, Va., and Balboa, C. Z. Changes in location of storehouses will be announced by competent authority.

Service force floating storage is supplied by barges, AK, and AKS ships. Stock carried by such facilities is the responsibility of the service force commander.

Requisitions for supplies and equipment in peacetime.—Under the new peacetime procedure of joint Army-Navy Procurement, requests for supplies are forwarded to the Purchases Division via the requisition unit of each individual service.

Form NavMed-4 (12-46) is used for ordering standard items listed in the new *Army-Navy Catalog of Medical Materiel*, in accordance with current instructions. Non-standard items may be obtained:

1. By purchase by authorized procurement methods when funds are available. When funds are not available purchase may be made in accordance with the *Manual of the Medical Department* and current directives.
2. By submission of form NavMed-4 for items covered by specific BuMed directive; items approved in annual estimates of expenditures listed for central procurement through MatDiv; items required by extra-continental activities not obtainable locally or through regular channels; professional books of a medical, dental, nursing, or other allied science category.

Requisitions for nonstandard items shall be forwarded to MatDiv, Bureau of Medicine and Surgery. After approval of such requisitions by MatDiv actual procurement is effected through the Army-Navy Medical Procurement Office, for delivery by the contractor directly to the requisitioning activity. Procedure for filling out such requisitions has been set forth in the *Manual of the Medical Department*, and in current directives.

PROCUREMENT

Procurement of supplies by the depots may be by requisition or transfer.

Material and services may be obtained on special forms such as: Purchase Requisitions; Stub Requisitions; Requisitions for Labor; Bureau Work Requisitions; Medical Supply Depot Requisitions and Invoices; and Transfer Vouchers (received). Changes in the routine of procurement may be necessary as joint activities develop.

Purchase requisitions must be approved by the Bureau and may be expended in quarterly portions for:

1. Sundry and lesser items of material and services that it is found necessary to obtain from time to time on the open market.
2. Specific major items of equipment to be purchased in the open market when approved by the Bureau.
3. Material carried in stock by the supply officer.

Such services are paid for by the disbursing officer upon receipt of a public voucher, three copies of the dealer's receipted bills, and a copy of the order.

Stub requisitions are used for supplies carried in stock in the supply department. Stub requisitions are prepared by the medical officer and submitted to the supply officer. A priced copy of the requisition is returned to the officer for his records. In some instances such supplies are issued on *Receipt Expenditure Invoices*.

Requisitions for labor are made through the local labor board for additional civilian personnel when the Bureau so authorizes.

Work requests, accompanied by all pertinent information, are forwarded to the Bureau for necessary work beyond the capacity of the force employed at naval hospitals, naval medical depots, and other activities.

Medical supply depot requisitions are used in ordering supplies listed in the BuMed section of the *Army-Navy Catalog of Medical Materiel*. Instructions and limitations on ordering are set forth in the *Manual of the Medical Department* and current directives.

Transfer vouchers (received) are forms used when material or supplies are transferred from one activity to another. The issuing activity sends an original and two copies of this form to the receiving activity. The receiving activity signs and returns the original and one copy, retaining the other for its own files.

All materials received or expended, whether by requisition or by transfer from one activity to another, must be recorded in the proper ledgers in the proper manner, noting items, date, from whom received or to whom delivered, and voucher number.

The *annual estimate of expenditures* comprises a

detailed analysis of items necessary to maintain large facilities for one year. Multiple copies are submitted at the direction of the Bureau. Annual estimates are reviewed in the Bureau and when approved constitute a fiscal guide for the activity.

A ship being commissioned is automatically sent the carefully planned medical and dental component required for its class. A planned requisition provides the means of maintaining adequate supplies and equipment. Annual estimated expenditures for ships are not necessary as they have approximately the same requirements from year to year. Surplus allotments can be carried over from quarter to quarter but not from year to year.

Preparation of an annual estimate requires the cooperation of all personnel having to do with materials and service, to insure a complete and intelligent report covering the requirements of all department.

Data required in compiling the estimate should be collected from official weekly inspections, notes, and various inventories classified and filed for reference.

ACCOUNTING SYSTEM

Two kinds of accounting are necessary: (a) appropriational accounting; and (b) cost accounting.

Appropriational accounting means the procedures involved in recording and analyzing the value of receipts of material and services obtained by expenditure, or transfer of funds, from appropriations under the cognizance of the Bureau of Medicine and Surgery.

Cost accounting concerns the procedures involved in recording and analyzing the value of materials and services used in the operation of an activity, regardless of the source from which such material and services may have been received.

CUSTODY

Custody of material received is vested in a member of the medical department who is responsible for accountability, inspection, and storage of such material. Designated officers, on ships, at naval hospitals, and shore stations, are responsible for medical department property in their charge until such custody is transferred to another. Instructions governing custody and accountability for medical property are given in detail in *Navy Regulations*, the *Manual of the Medical Department*, and current directives.

DISPOSITION

Custodial responsibility can be terminated through disposition by *consumption* (proper use); *transfer* (by conveyance from one activity to another or transferring of responsibility from one officer to another); or by *survey* (finding the material unfit for use).

There are two kinds of surveys: *formal* and *informal*.

A *formal survey* is a survey of property made by a surveying officer or survey board appointed by the senior officer present. A survey board consists of one or more naval officers, at least one of whom must be commissioned.

An *informal survey* is a property survey performed by the head of a department.

Articles disposed of by survey must be properly accounted for by showing the expenditure of the item on the ledger sheet, noting authority for survey, number, and date.

Report of the survey is forwarded to the Bureau of Medicine and Surgery. Written instructions for disposal are issued by the Bureau.

Section E

THE NATIONAL NAVAL MEDICAL CENTER

The National Naval Medical Center was established by the Navy Department in 1935 as a medical, diagnostic, and educational center. It comprises the following entities: U. S. Naval Hospital, U. S. Naval Medical School, U. S. Naval Dental School, U. S. Naval Medical Research Institute, and U. S. Naval School of Hospital Administration. Each is established as a separate command, and all function under the general administrative jurisdiction of the Medical Officer in Command of the National Naval Medical Center. In effect, the Medical Center is a consolidation of several scientific and professional activities and facilities of the Medical Department assembled in one unified organization and command.

In February 1942 the activities of the Medical Center,

then located at the Bureau of Medicine and Surgery, Washington, D. C., were transferred to the newly constructed Medical Center at Bethesda, Maryland. Seven months later, on 31 August, President Roosevelt, who had taken an active part in the initiation of the project, officially dedicated the Medical Center in a ceremony that also marked the 100th anniversary of the Bureau of Medicine and Surgery. The Naval Medical Research Institute was commissioned in its new location on Navy Day, 27 October 1942.

The National Naval Medical Center occupies an imposing site of more than 200 acres, opposite the National Institute of Health, in suburban Washington. Its vast physical plant is dominated by a central administration building of four stories, with a tower 18

stories high, the top of which forms a Geneva cross.

Located in the central group of buildings are administrative offices, laboratories, classrooms, a surgical pavilion, commissary, an auditorium with a seating capacity of 600, a hospital with about 270 beds, and the headquarters of the Naval Dental and Medical Schools. Separated from the central group of buildings are hospital corpsmen's quarters, nurses' quarters, officers' quarters, Naval Medical Research Institute, Naval School of Hospital Administration, occupational therapy building, and recreation building. One-story ward buildings to the north and south of the main building provide additional hospital space.

U. S. NAVAL HOSPITAL

The present U. S. Naval Hospital at Bethesda is the result of more than a century of effort to establish a naval hospital of distinction in the Nation's Capital. In 1812 the first hospital facility for naval personnel in Washington was established near the Navy Yard in a building rented for that purpose. This hospital was succeeded by one established at the Navy Yard, which was discontinued in 1843. Following the Civil War, a 50-bed hospital, now a home for ex-servicemen, was erected on a site adjacent to the Washington Navy Yard. A second naval hospital in Washington was established in 1906 on the present location of the Bureau of Medicine and Surgery. For several years thereafter this new hospital was known as the Naval Medical School Hospital. When the "old" naval hospital near the Navy Yard was discontinued in 1911, the latter institution became the U. S. Naval Hospital, Washington, D. C.

This hospital was transferred to Bethesda in 1942, as part of the National Naval Medical Center. The new hospital is a general hospital for the care, treatment, and hospitalization of active and retired personnel of the Navy, Marine Corps, and Coast Guard, and their dependents; also, patients authorized by the Veterans' Administration for hospitalization. In addition, it provides for special groups of individuals, such as members of Congress, members of the foreign service of the Department of State, and naval attaches of foreign countries on duty in Washington.

The hospital is fully equipped with all modern facilities and has been especially designated as a center for neurosurgery, plastic surgery, and oncology. It collaborates with the National Institute of Health in its cancer research program by making available to that agency several wards with their attending facilities.

An active and vigorous residency and inter-training program is carried on at the hospital. It has been approved by the American Boards, and the Council on

Medical Education and Hospitals of the American Medical Association for resident training in the various medical specialties. Training of Medical Department personnel is carried out in connection with administration of the Naval Hospital to meet special needs of the naval service.

Since 1942 the professional services of the Medical Center have expanded and multiplied to keep abreast of medical progress and service demands. The Tropical Disease Service was established in 1943 to coordinate research and clinical experience more closely in the field of tropical medicine. The active management of the tropical disease ward is under the direction of the chief of medical service of the hospital, but many of the research problems are instituted and outlined by an Advisory Committee for Tropical Disease appointed by the medical officer in command of the Medical Center.

To meet the need for specialized medical advice, the all-important consultation service of the medical department was enlarged in 1943. The facilities of this service are now available to patients referred to the service by various dispensaries in Washington and vicinity, by the Surgeon General, and by the attending physician to Congress.

The Department of Physical Medicine, which had formerly been under the X-ray department, became a separate department in 1943, embracing electrotherapy, hydrotherapy, fever therapy, and occupational therapy.

In 1944, a rehabilitation program was inaugurated. Unlike many naval hospitals, the hospital at Bethesda has not curtailed this program to any great extent since the end of the war. The program is sufficiently wide to include all activities and services which are required to supplement the usual therapeutic procedures necessary to achieve maximum adjustment of the individual patient for return to civil life with the least possible disability. In the same year an education service, including instruction in high school, college, and special courses, was established as a part of the rehabilitation program.

U. S. NAVAL MEDICAL SCHOOL

Although the Navy's first Surgeon General, W. P. C. Barton, as early as 1809, recommended the establishment of a training school for naval medical officers, no definite steps were taken toward such an establishment until 1878, when a 2-year course of formal instruction for junior medical officers of the Navy was inaugurated at the U. S. Naval Hospital, Brooklyn, N. Y., under the direction of Surgeon General William Grier. Credit for the establishment of the first bona fide U. S. Naval Medical School, however, is usually given to Surgeon General Tryon, who, in 1893, issued an order creating

an instructional course of three months' duration at the U. S. Naval Laboratory and Department of Instruction at Brooklyn, New York. Dr. Tryon's school continued in operation until the demand for medical officers at the outbreak of the Spanish-American War brought about its discontinuance. In 1902, under the direction of Surgeon General P. M. Rixey, the Naval Medical School was reopened at the old Naval Observatory site, Washington, D. C., where it became a unit of the National Naval Medical Center.

The Naval Medical School is fundamentally a postgraduate institution designed to train medical officers in problems peculiar to the naval service. Shortly after their entry into the service, medical officers are given special training at the Medical School "before they are turned loose in the field." Officers who have spent a number of years in the service are given refresher courses at the school to keep them in line with new advances in medicine. Since 1917 the Medical School has also trained enlisted personnel, both male and female, in various medical specialties. The principal activities of the Medical School include: regular instruction courses, consultation and physical examinations, research and investigation, testing materials and proving methods, production of reagents and biologicals, liaison with government and civilian institutions, diagnostic and medico-legal service with examining boards, maintenance of a reference library, printing, photography, and reproduction. Its specialties include epidemiology, tropical medicine, malariology, laboratory techniques, pathology, photofluorography, and audio-visual aids.

The general laboratories, which perform a highly important function for the various components of the Medical Center, comprise those devoted to entomology, parasitology, hematology, serology, bacteriology, pathology, epidemiology, biologics, physiological chemistry, general chemistry, pharmacy and chemistry, blood collecting, and blood plasma. Toxicological examinations upon autopsy material in cases where death occurred under extraordinary circumstances throughout the Navy are done in the general chemistry laboratory of the Naval Medical School. The morgue for the hospital at Bethesda is within the Naval Medical School, and all autopsies performed there are done by the Medical School's pathologists.

The Department of Tropical Medicine and Parasitology has become one of the outstanding divisions of the Naval Medical School. One of its exceptional collections is an insectarium, designed for the breeding and housing of insects. It has prepared a very fine manual of tropical exotic diseases for the guidance of

the Navy's Medical Department.

During World War II men trained in this department provided the nucleus for hard-hitting malaria control outfits scattered throughout the world. The last war also brought new responsibilities to the Epidemiology Department, which is directly concerned with the control of communicable diseases. Two of its laboratories, Enteric Pathogen and Streptococcus Typing, expanded to such proportions that they were established later as independent departments. On short notice the Epidemiology Department is prepared to staff and equip an epidemiology unit for the investigation of any epidemic. Other departments of the Naval Medical School have also made valuable contributions to the advance of nautical medicine.

The Naval Medical School publishes laboratory manuals, which are produced by the officers in various departments, together with manuals published by members of the hospital staff. These receive wide distribution throughout the Navy, and a number of copies are sent to other Federal agencies, as well as to medical schools and civilian hospitals.

The National Naval Medical Center Library, consisting of over 37,000 medical books, journals, pamphlets, etc., is under the administrative command of the Naval Medical School.

U. S. NAVAL DENTAL SCHOOL

The Naval Dental School was originally established in 1923 and subsequently organized as a separate command by order of the Secretary of the Navy, and became a unit of the National Naval Medical Center, March 1936.

The Naval Dental School functions primarily as a school for postgraduate instructions to naval and dental officers, offering courses in the following:

Basic indoctrinational courses.—This course is designed for newly commissioned officers and is not as comprehensive, professionally, as the general postgraduate course. It gives special emphasis to *Navy Customs, Navy Regulations, Navy Courts and Boards*, and the *Manual of the Medical Department*.

General postgraduate courses.—This course is designed to acquaint experienced officers with recent advances and newly developed specialized procedures. It includes oral diagnosis and roentgenology, operative dentistry, periodontia, oral bacteriology, endodontia, biochemistry, crown and bridge prosthesis, partial and full denture prosthesis, exodontia, dental property and accounting, and dental administration.

Special Postgraduate Courses:

1. Oral Surgery.
2. Prosthodontia.
3. Maxillofacial and Ocular Prosthesis.
4. Periodontia and Oral Pathology.
5. Operative Dentistry.

All courses are of six months duration.

The Naval Dental School functions as a training center for enlisted dental technicians throughout the Navy, offering courses in dental technology (general), dental technology (prosthetic), and dental repairman.

Maxillofacial prosthesis and ocular prosthesis are provided for all patients requiring such treatment. In addition, the Naval Dental School provides routine prosthetic and operative dental treatment for patients of the Naval Hospital, the staff of the National Naval Medical Center, and activities dependent on this command for dental logistic support.

NAVAL MEDICAL RESEARCH INSTITUTE

The Naval Medical Research Institute, the largest activity for medical research in the Navy, was established in 1942. Its present facilities at the National Naval Medical Center comprise more than 100 laboratories. These are designed for research in chemistry, biophysics, physiology, psychology, bacteriology, virology, parasitology, pathology, pharmacology, and for dentistry, and experimental surgery.

In addition, it is equipped with pressure tanks for research in aviation medicine, submarine and diving medicine, and psychometric rooms for physiological and environmental studies, as well as an animal house with facilities for breeding laboratory animals, technical shops, and instrumentation laboratories. Practically every scientific instrument needed for biological research is available in the various laboratories. Many special apparatus and installations are included, such as the electron microscope, apparatus for X-ray diffraction and electrophoresis, an ultracentrifuge, and ultraviolet, infrared, and mass spectrographs.

The staff consists of some 70 scientists in various fields of the biological sciences, and approximately twice that number of technical assistants from the Hospital Corps and Civil Service. About one-third of the scientific staff is civilian, one-third are members of the Allied Science Section of the Medical Service Corps, and the remainder are medical and dental officers with aptitude for investigative endeavor.

The Institute is organized to accord the individual investigator the fullest freedom in the prosecution of basic ideas, to further advances of a fundamental char-

acter. Research projects are given a simple classification in the general schedule of arrangements and may be grouped in these four basic categories: (a) relating to the Navy as a whole or to the combatant branches; (b) afloat; (c) afield; and (d) aviation. Each research project is initiated either by the staff of the Institute or by the Bureau of Medicine and Surgery after the formulation of the research into project form. A principal investigator is in charge of each project, and holds full responsibility to the research executive for the progress, and all reports, relating to his investigation.

Research undertaken at the Institute embraces such projects as the medical aspects of ionizing radiation; characteristics of the body that enable it to withstand high impact forces encountered in aviation; development of a vaccine for the prevention of scrub typhus; the biological effects of vibration; investigation of the causes and means of control of diarrheal diseases and dysenteries; dietary elements influencing dental caries; studies of the cerebral circulation by means of the lucite calvarium; studies of the sleep wakefulness cycles employing the technics of neurosurgery; facilitation of learning in lower animals and man; and the histopathologic effects of gas bubbles following rapid decompression from high pressure atmosphere and to high altitudes.

Applied research and the adaptation of research findings to procedures leading to the betterment of efficiency and maintenance of the health of naval personnel form an integral part of the research program.

U. S. NAVAL SCHOOL OF HOSPITAL ADMINISTRATION

From 1943 to 1945 the Hospital Corps Officers School functioned under the command of the Naval Hospital, National Naval Medical Center, as a training center for administrative officers. On 5 September 1945 this School was designated as the U. S. Naval School of Hospital Administration and was established as a separate command of the National Naval Medical Center.

The school functions as a training center for Medical Service and Hospital Corps officers in the various fields of hospital administration.

The current course of instruction requires 10 months to complete and consists of classroom work and practical laboratory instruction. Included in this course are the following subjects: Medical Department accounting, property, procurement, etc.; office management and hospital personnel administration; legal procedure and naval laws; commercial law; public speaking; commissary administration; maintenance methods; physical and infantry drill; and special subjects.

With the graduation of the ninth class in February

1948, a total of 456 officers have completed the course in hospital administration. To meet the need for enlisted personnel trained in administrative procedures,

the school has recently inaugurated a comprehensive training course in accounting and other business subjects that leads to a certificate as a technician.

Section F

DENTAL FACILITIES

DENTAL COMMAND

The term "command" is used as a noun frequently in this course and, when so used, denotes a ship, station, or activity under a single administrative head and having a single functional or logistic goal.

When an officer of the Dental Corps is charged with the command and direction of a Naval Dental Activity for the purpose of carrying out its mission, he is known as the commanding officer.

The organizational plan of a modern Naval Dental Facility is organized in such a manner that one dental operating unit with needed accessory equipment is provided for each officer of the Dental Corps. Additional equipment and supplies are provided for use in the examination and consultation department, oral hygiene department, X-ray department, etc. Sufficient officers of the Dental Corps are usually assigned so that a single working shift will be able to handle the normal patient load. In times of emergency, when the work load is increased, a double or even triple, work shift is established in order to give needed care until additional units, if necessary and available, can be installed.

The number of dental personnel assigned to a dental command will depend on several factors: the size of the activity; the type of service to be rendered; the number of shifts employed; the distance to other dental activities; and the number of personnel dependent on the command for dental care. These must all be considered in determining the number of dental officers and dental enlisted personnel needed.

The distance from other dental clinics may sometimes influence the type of service to be made available. An activity which is located at a considerable distance from a major dental facility will often include a prosthetic unit which normally would not be justified by the number of personnel to be serviced. This is done in order to reduce to a minimum the number of men to be transferred from their duty stations merely to receive prosthetic dental care.

Officers of the Dental Corps in command of separate dental activities may write directly to the bureau or

station concerned if the communication deals entirely with the technical work of their commands, but communications which effect the operation of any other unit must be forwarded through the commandant for his recommendation. In case of doubt, correspondence should be sent via the commandant.

Since the commandant is the direct representative of the Navy Department, carbon copies of letters or reports addressed to a bureau are usually sent to him for his information. Maintenance of a close liaison with the commandant's office, through the district dental officer, is advisable since the individual dental officer will thus keep abreast of current directives and will learn how new directives are being interpreted by his immediate superiors. Many new officers, especially those with little or no naval administrative experience, often complain about red tape, and many a jest regarding "the chain of command" has made its rounds through the service.

The Navy's policy in insisting that all correspondence wend its way along the chain of command is not the result of an arbitrary decision or a desire to make things difficult. This policy is essential because of the size of the Navy as a whole and the many complex units of which it is composed.

If, in official correspondence, the Navy permitted individual officers and individual organizations to by-pass the chain of command, administrative commands would soon be out of touch with the operating and functional problems of their component units. Then too, the addressee of a piece of correspondence which had not gone through channels would have no means of knowing how the action requested would effect the general policies of adjacent units or area commands. Letters which have been properly routed are of far greater value to the final addressee, also, since such letters have comments and recommendations entered in the forwarding endorsements which permit consideration of all phases of the subject matter.

Detailed instruction regarding the writing of official correspondence and the forwarding of such material may be found in the *Navy Regulations*.

COMMANDING OFFICER

A sound organization and physical layout are basic requirements for the efficient operation of any dental clinic. Only in this way can men and materials be effectively applied in attainment of recognized goals. The organization of a dental clinic is not self-starting, nor can it run on its own momentum. If conflicts in authority, wasteful operations, and other pitfalls of management are to be avoided, there must be an effective leadership at the top. The efficiency of any organization is measured by the caliber of the command.

The senior dental officer is responsible for the efficient management of a naval dental facility and is designated as commanding officer. The officer of the Dental Corps so designated must be a capable administrator with ability to properly delegate authority. Since no officer in command can hope to perform his job singlehanded, he must divide his work, assigning specific tasks to subordinates.

In a well organized dental facility, the principal function of the commanding officer is the over-all supervision of the organization.

Dental officers in command of a dental facility have a two-fold responsibility: as a military administrator subject to orders of a higher competent authority, and as a professional man charged with the welfare of the patients.

In general, the top dental officer has the same *military authority* as a commanding officer of a ship. He has judicial power and can assign punishment when necessary to men attached to the command. Such sentences are recorded in the report book, in the journal of the officer of the day, and in the Service Record of the individual.

He requires obedience to Federal laws, including penal and civil laws of the State and territory. He cooperates with civilian authorities in the control of any communicable disease which is reportable in the community or vicinity of his command.

He publishes orders and memoranda for the guidance of staff and patients. In his absence, or when he is relieved from duty, or detached without relief, the command falls upon the executive officer, or, in his absence, upon the officer of the Dental Corps next in grade and regularly attached to the activity for duty.

He is responsible for the treatment of all patients. Treatment of unusual character should not be undertaken without his approval.

He assigns officers of the Dental Corps, Medical Service Corps, Hospital Corps, Nurse Corps, and dental technicians, and provides plan for rotation of

duty to provide professional experience for such personnel. He holds periodic conferences to discuss professional and administrative subjects. He holds regularly scheduled inspections, taking whatever safety precautions are necessary, as well as weekly fire and other necessary drills.

These are the highlights of some of the senior dental officer's responsibilities. A complete list of his responsibilities can be found in the *Manual of the Medical Department*. Although the responsibility and authority for discharging most of these duties are, of necessity, delegated to subordinates, there is one task that cannot be delegated. He cannot delegate to another his personal function and responsibility to award punishments or to order other disciplinary measures such as summary courts-martial or deck courts.

EXECUTIVE OFFICER

The executive officer is the officer of the Dental Corps next in grade and the direct representative of the commanding officer. He is the immediate superior of the other officers attached to the dental facility. The heads of the professional services and administrative divisions report directly to the executive officer, who keeps his superior fully informed as to the operation of the clinic.

Since military etiquette requires that permission be obtained from the executive officer to communicate directly with the commanding officer, all requests or communications intended for the commanding officer must be forwarded through the executive officer. This is done in order that the commanding officer may be relieved of minor details which can be adjusted by the executive officer.

In the absence of the commanding officer the executive officer assumes command.

His duties, in general, embrace supervision of the details in connection with the maintenance and operation of the clinic in all departments, including the treatment of patients. Accordingly, he keeps himself fully informed regarding policies of the commanding officer on matters pertaining to *Navy Regulations*, directives and orders effecting the command, or that may be issued by the Bureau of Medicine and Surgery or other competent authority. He keeps the commanding officer fully advised concerning all matters of importance upon which he has acted. He endeavors to maintain a high level of morale among the staff and patients.

The executive officer is charged with the development and maintenance of an efficient organization of all departments and facilities of the clinic. It is his duty to supervise the assignments of all officers and enlisted personnel of the clinic staff and civil employees. The

personnel officer handles the assignments of the enlisted personnel and civilians with the approval of the executive officer. The executive officer provides bulletin boards located in suitable places, where copies of all notices and orders issued shall be posted.

The executive officer is responsible for: (a) suppressing disorders, correcting abuses, and taking all measures necessary to maintain discipline; (b) seeing that all infractions of law or of *Navy Regulations*, and violations of discipline are promptly reported to the commanding officer for appropriate action; and (c) seeing that all instances of commendable conduct exhibited by the staff or patients, as well as the names of members of the staff showing outstanding ability, are brought to the attention of the dental officer in command.

It is the executive officer's duty to make all necessary arrangements for the safety of personnel and property, and to organize an adequate police system, including a master-at-arms detail.

The executive officer provides safeguards for property and personnel. The absence of proper safety devices shall be reported to the commanding officer. The executive officer is charged with responsibility for the installation and employment of such devices. He maintains an up-to-date fire bill, providing for all requirements consistent with proper security, and prescribes the time at which the weekly fire drill will be held, taking charge of all such drills and fire-fighting operations.

The executive officer arranges for safe custody of all clinic keys, and requires compliance with instructions concerning the receipt, custody, and issue of alcohol, narcotics, and poisons, as listed in the *Manual of the Medical Department*.

The executive officer provides for all inspections, conducting or designating an officer to conduct, such of these inspections as the commanding officer may direct. The material inspections will be planned to comply with the requirements of the *Manual of the Medical Department*. On such days as he does not inspect the building and grounds, the executive officer arranges for their inspection. He immediately reports to the commanding officer any unsatisfactory condition found.

The executive officer supervises the preparation of liberty lists and issuance of passes to enlisted personnel and civilian employees, and prescribes the method of checking the departure and return of those granted liberty; makes recommendations concerning leave requests to the dental officer in command; receives all requests of officers to be absent from duty for short periods or for morning quarters, acting on such requests in the manner prescribed by the commanding officer; and

provides for daily mustering of personnel attached, reporting unauthorized absences to the commanding officer.

The executive officer observes officer personnel to determine their efficiency in performance of duty and compliance with regulations, and inspects, or has inspected, the clothing and outfits of all enlisted personnel, assuring himself that such personnel have the required clothing and that uniforms are in good condition and comply with regulations.

Obviously, the executive officer cannot personally supervise or carry out all of the above responsibilities. He actually holds the heads of the various services responsible to him for carrying out the policy of the command. He makes the over-all plan and sees that it is carried out.

OFFICER OF THE DAY

Members of the dental staff of a naval dental clinic are assigned officer of the day duties by the executive officer, who supervises the preparation and posting of duty lists in appropriate locations.

Officers of the Dental Corps standing duty as officer of the day should familiarize themselves with the relevant provisions contained in *Navy Regulations*, *Manual of the Medical Department*, and *Clinic Orders*.

The tour of duty of the officer of the day is for 24 hours. He must remain on the clinic reservation at all times, leaving only when properly relieved. After regular working hours, the officer of the day assumes the responsibilities, within certain limits of his authority, of the management and technical control of the clinic. In important matters, and in making decisions that may belong to those in higher authority, he should feel free at any time to request advice from the commanding officer or the executive officer, or in their absence, from the senior officers available.

The officer of the day should follow a rule of granting no emergency leaves or extension of leaves, except in extreme emergency situations; be available to render emergency dental treatment when necessary; and maintain order and discipline.

After regular working hours, he makes a complete inspection of all dental operating rooms, prosthetic laboratory, and other facilities of the clinic, and makes the rounds of the building after lights are out to see that all is secured.

He shall keep a complete, succinct, and accurate record in the *officer of the day log book* of all important events that occur during his tour of duty, including all entries required by the commanding officer.

Some important items for entry in the OD's log include:

1. All inspections.
2. Fires and fire drills.
3. Arrival and departure of personnel on leave.
4. Personnel reporting for duty or being detached.
5. Personnel absent without leave or over leave.
6. Confinement and release of offenders.
7. Meetings of all courts and boards.
8. Any event the recording of which may be valuable for future reference.

Any entries made by another officer temporarily relieving the officer of the day will be signed by the officer making such entries.

Upon completion of his tour of duty, and when properly relieved, the officer of the day signs the log and submits it to the commanding officer for his approval.

PROFESSIONAL SERVICES

In the interest of professional efficiency, the commanding officer of each naval dental clinic organizes the professional activities of his clinic into services.

The commanding officer assigns the senior officer of each professional service as head of that particular service, such as head of the operative service, head of the oral surgery service, and head of the prosthodontia service, etc.

Heads of services are responsible to the commanding officer for the discharge of their professional and administrative duties and must carry out all of the orders, directives, and policies of the command.

Some of the specific duties of the heads of services are:

1. To answer any questions concerning their service.
2. To keep the commanding officer informed of any unusual happenings within the service.
3. To make a daily inspection of their service concerned with the professional care of the patients as well as with the military organization.
4. To supervise the clinical, surgical, and prosthetic facilities of the particular service, and facilities for keeping records.
5. To issue necessary instructions to enlisted dental personnel regarding procedures and techniques.
6. To train assistants and others assigned for instruction of clinic personnel.
7. See that clinic material and other facilities are made available to instruct and indoctrinate junior officers and enlisted personnel.

ADMINISTRATIVE SERVICES

The purpose of the Administrative Services is to carry out the nonprofessional business management of the

dental facility. The administrative departments of various commands will vary greatly in size and complexity dependent upon the size of the commands involved, and the position of each, in the over-all program of the Navy. Regardless of size, however, the administrative department of every dental command which, as a rule, is located in a separate section readily accessible to the various departments, will conform to the pattern of all Navy commands as described in other sections of this course, and will be designed to set up an operating policy which will conform to existing Navy policies. The administrative department will be divided into various offices, the number and sizes to depend upon the physical layout of the command as a whole and the logistic aim of the command. Each section is headed by a Medical Service Corps officer, an officer of the Hospital Corps, who is accountable to the command for the operation of his section.

The office of central authority is that of the officer of the Dental Corps in command, where matters of official policy are determined. In the larger commands, the office of the executive officer would be the next in line of authority, since it is the duty of the executive officer to carry out the policies established by the dental officer in command.

Administrative assistant.—When it is desirable to relieve the executive officer of certain details of administration, a Medical Service Corps officer or a Hospital Corps officer is usually assigned and designated the administrative assistant. The position is in reality a "staff" job, similar to an executive secretary, to relieve the executive officer of routine details.

The functions of the administrative assistant, subject to the direction of the executive officer, are:

1. To advise and assist in the nonprofessional functions, management, and operation of the dental clinic as a facility.
2. To keep up-to-date information regarding laws, regulations, policies, and instructions pertaining to naval administration in general and especially those applicable to the administrative management of the facility.
3. To keep the executive officer informed and make such recommendations as may be indicated with respect to the effectiveness of administrative organization and management.
4. To be responsible for the accomplishment of all routine matters of an administrative nature not requiring the personal attention of the executive officer or commanding officer.
5. To assume such collateral duties as may be assigned by the executive officer.

One of the first personal contacts of a new staff officer in a dental command will be with the administrative officer. His office will process orders, make out leave reports, check records, prepare travel and per diem claims, arrange for transfer of household effects, and make assignments to quarters or housing when available.

In most establishments the service records of enlisted personnel are handled by the personnel officer, but the administrative officer retains all officers' records.

For this reason, staff officers will consult with the administrative officer when departing for or returning from leave, when submitting requests to schools or special duty, or when making an inquiry regarding administrative matters.

In other than major dental establishments, administrative assistants may be assigned additional duties, and are responsible for the personnel and finance sections of the clinic.

Personnel and records section.—The direction of the personnel and records section in a naval dental clinic is ordinarily assigned to a Medical Service Corps or Hospital Corps officer. This officer should have a sound general knowledge of personnel management to function effectively.

The succeeding material is devoted to a discussion of the organization and functions of a personnel section in a naval facility as well as to some of the more urgent problems confronting an officer serving as head of the section in a personnel capacity.

In the naval dental clinic the custody, maintenance, and distribution of records and reports pertaining to all staff and patient personnel is one of the primary functions of the personnel section. This section acts as a communication center through which passes all pertinent information to and from outside commands. It also expedites the flow of personnel data to the interested clinic unit.

In addition to the record-keeping responsibility, the personnel section is charged with the task of training and organizing its own personnel. Under the direction of the executive officer, the officer who heads this section also coordinates the assignment of enlisted staff personnel to various work details. The broader phases of personnel management, however, involving such questions as the procurement, allocation, and reallocation of personnel within the clinic are the responsibility of the executive officer.

Personnel officers are responsible for duplication of directives and orders modifying current procedures. These are distributed to all officers so that their files of official material may be kept current at all times. If

directives are expected to be read and followed, personnel officers are urged to keep them simple, brief, and to a minimum consistent with the principles of good management.

The necessity for division of work among various subordinates creates one of the most perplexing problems of personnel administration. It is the basic principle of efficient management that a section head must assign to others the actual performance of the work. He must delegate authority as well. This will aid in the development of capable assistants and contribute to the over-all efficiency of the clinic organization.

Personnel organization provides for the assignment of personnel functions concerned mainly with enlisted and staff personnel records, reports, and assignments to these offices: the Patient Records office, the Military Personnel office, and the Civilian Personnel office.

Patient record office.—This section is responsible for compilation of statistics on personnel, and rations, and for the preparation of forms required by the local naval district or by the Bureau of Medicine and Surgery. The custody, maintenance, and distribution of the patients' dental records are also duties of this section.

Military personnel section.—This section is responsible for receiving, assigning, transferring, and discharging enlisted personnel, for handling reenlistments, and for maintaining staff personnel records.

Civilian personnel section.—Selection, training, pay policy, assignment of duties and supervision, employee records, and other matters pertaining to civilian employment are handled by this section.

Because of frequent changes in the assignment of enlisted personnel, it is often necessary to have certain work assignments carried out by civilian supervisors and clerks in order to give continuity to the clinic organization. The employment of civilians, however, usually gives rise to several difficult problems that must be overcome if the stability of the organization is to be maintained. Certain civilians with specialized training and experience often become indispensable to an organization, and their separation has a disrupting effect that is almost incalculable. In the absence of Government controls, they also change jobs frequently, thus contributing to a high labor turnover rate. To cope with these situations, it is important that a training program that includes both on-the-job and replacement training be instituted. A few enlisted men should be trained to supervisory capacities to act as replacements to fill emergency needs. Shifting an employee who has been too long at one task to a new desk, in addition to

stimulating him to better effort, will increase his value to the office as a replacement.

A replacement program is highly essential for institutions located outside the United States as competent civilian personnel is often difficult to find in foreign areas.

Finance office.—The finance officer has supervision of as difficult and complex a section as any of the other administrative heads. An officer assigned to this position should have considerable training and experience. He must have had academic training in accounting and experience in some responsible position in finance. Once officers are selected and trained for fiscal assignments, they should be retained and not rotated through other administrative positions. Whether civilian or military, storeroom personnel must be trained storekeepers or interested in becoming storekeepers. When there is lack of interest, many mistakes will be made; stores will not be checked or recorded accurately upon receipt and issue. Many store items actually in stock will not tally with the amounts listed on the stores records. In the presence of such carelessness only frequent inventories will enable the finance officer to know what he has in the storeroom.

It is highly desirable to place a qualified civilian storekeeper in charge of the storeroom and hold him accountable for all material in the issue bins and bulk storerooms. In addition, he should be responsible for training all personnel who are assigned to this section. When a civilian storekeeper is not available, a junior Medical Service Corps officer or a chief warrant officer of the Hospital Corps should be assigned. A chief dental technician or a dental technician, first class, however, may be assigned to the stores and equipment section, including the storerooms, for training purposes.

The Kardex dental stores record system should be an integral part of the storeroom operation, since the primary purpose of this system is to establish information on stores ordered, received, and issued. Ledger sheets on stores are being maintained at present (1948) but will probably be discontinued when the Kardex medical stores record system has been fully established in all facilities.

At regular intervals the finance officer conducts a complete inventory of all equipment assigned to the command. The books of the finance section are adjusted according to the findings of each inventory.

It is necessary to assign a property number to each item of equipment valued in excess of \$50. This number is usually imprinted on a metal tag which is then fastened to the property. Since the process is time-consuming,

the better method of using "decals" has been developed. "Decal" is a generic term for various types of identification markers, currently used by the Navy in many offices. These decals may be stickers, tags, or stencils.

Many facilities replenish stock without regard for usage rates. Such a procedure can easily result in getting either too little or too much of a particular item in stock. If the stock is depleted too soon, it is often necessary to resort to emergency open purchases. Since drugs and other supplies are much more costly when ordered in small quantities from local concerns, open market purchases tend to increase procurement costs. The large amount of paper and record work involved in each purchase also increases clinic costs. Conversely, overstocking is equally uneconomical, since excess time is consumed in handling, inventorying, and maintaining the necessary stores. One solution to the problem lies in the establishment of sound usage rates and order points, based primarily on past experience. The new Kardex stores system, if properly utilized, will furnish accurate data for usage rates and will result in more economical operation. Each facility should pay particular attention to this phase of stores maintenance.

An open purchase is the procurement of drugs or of other items directly from a commercial concern. An open purchase permits a facility to obtain necessary supplies in an emergency. Although open purchases are often essential, because of their higher cost they should be kept at a minimum consistent with the needs of the clinic at the time of the emergency.

If their purchase is not carefully controlled, stocks of open purchase drugs may accumulate. Before a purchase in the open market is made, records should be checked to make sure that a shipment of these same drugs is not about to arrive from the supply depot. Drugs piling up from two sources will soon create an unwieldy surplus.

REQUISITIONS FOR SUPPLIES AND EQUIPMENT IN PEACETIME

Under the new peacetime procedure of joint Army-Navy Procurement, requests for supplies are forwarded to the Purchases Division via the requisition unit of each individual service.

NavMed Form 4 is used for ordering standard items listed in the new *Army-Navy Catalog of Medical Material*, in accordance with current instructions. Non-standard items may be obtained:

1. By purchase, by authorized procurement methods when funds are available. When funds are not available, purchase may be made in accordance with the *Manual*

of the *Medical Department* and current directives.

2. By submission of Form NavSandA 76 for items covered by Specific BuMed directive; items approved in annual estimates of expenditures listed for central procurement through Material Division; items required by extracontinental activities not obtainable locally or through regular channels; professional books of a medical, dental, nursing, or other allied science category.

Requisitions for nonstandard items shall be forwarded to MatDiv. After approval of such requisitions by MatDiv actual procurement is effected through the Army-Navy Medical Procurement Office, for delivery by the contractor directly to the requisitioning activity. Procedure for filling out such requisitions has been set forth in the *Manual of the Medical Department*, and in current directives.

Procurement.—Material and services may be obtained on special forms such as: Purchase Requisitions, Stub Requisitions, Requisitions for Labor, Bureau Work Requisitions, Medical Supply Depot Requisitions and Invoices, and Transfer Vouchers (received). Changes in the routine of procurement may be necessary as joint activities develop.

1. *Purchase requisitions* must be approved by the Bureau and may be expended in quarterly portions for:

(a). Sundry and lesser items of material and services that it is found necessary to obtain from time to time on the open market.

(b). Specific major items of equipment to be purchased in the open market when approved by the Bureau.

Such services are paid for by the disbursing officer upon receipt of a public voucher, three copies of the dealer's receipted bills and a copy of the order.

2. *Stub requisitions* are used for supplies carried in stock in the supply department. Stub requisitions are prepared by the officer concerned and submitted to the supply officer. A priced copy of the requisition is returned to the requisitioning officer for his records. In some instances such supplies are issued on *Receipt Expenditure Invoices*.

3. *Requisitions for labor* are made through the local labor board for additional civilian personnel when the Bureau so authorizes.

4. *Work requests*, accompanied by all pertinent information, are forwarded to the Bureau for necessary work beyond the capacity of the force employed at naval hospitals, naval medical depots, and other activities.

5. *Medical supply depot requisitions* are used in ordering supplies listed in the BuMed section of the *Army-Navy Catalog of Medical Materiel*. Instructions and limi-

tations on ordering are set forth in the *Manual of the Medical Department*, and current directives.

6. *Transfer vouchers (received)* are forms used when material or supplies are transferred from one activity to another. The issuing activity sends an original and two copies of this form to the receiving activity. The receiving activity signs and returns the original and one copy, retaining the other for its own files.

All materials received or expended whether by requisition or by transfer from one activity to another, must be recorded in the proper ledgers in the proper manner, noting items, date, from whom received or to whom delivered, and voucher number.

The *annual estimate of expenditures* comprises a detailed analysis of items necessary to maintain large facilities for one year. Multiple copies are submitted at the direction of the Bureau. Annual estimates are reviewed in the Bureau and, when approved, constitute a fiscal guide for the activity.

Preparation of an annual estimate requires the cooperation of all personnel having to do with materials and service to insure a complete and intelligent report covering the requirements of all departments.

Data required in compiling the estimate should be collected from official weekly inspections, notes, and various inventories classified and filed for reference.

Accounting system.—Two kinds of accounting are necessary: appropriational accounting, and cost accounting:

1. *Appropriational accounting* means the procedures involved in recording and analyzing the value of receipts of material and services obtained by expenditure or transfer of funds from appropriations under the cognizance of the Bureau of Medicine and Surgery.

2. *Cost accounting* concerns the procedures involved in recording and analyzing the value of materials and services used in the operation of an activity regardless of the source from which such material and services may have been received.

Custody.—Custody of material received is vested in a member of the Dental Department who is responsible for accountability, inspection and storage of such material. Designated officers, at naval hospitals and shore stations, are responsible for medical department property in their charge until custodianship is transferred to another. Instructions governing custody and accountability for dental property are given in detail in *Navy Regulations*, the *Manual of the Medical Department*, and current directives.

Disposition.—Custodial responsibility can be terminated through disposition by *consumption* (proper use);

transfer (by conveyance from one activity to another or transferring of responsibility from one officer to another); or by *survey* (finding the material unfit for use).

There are two kinds of surveys: formal and informal:

1. A *formal survey* is a survey of property made by a surveying officer, or a survey board appointed by the senior officer present. A survey board consists of one or more commissioned naval officers.

2. An *informal survey* is a property survey performed by the head of a department.

Articles disposed of by survey must be properly accounted for by showing the expenditure of the item on the ledger sheet noting authority for survey, number, and date.

Report of the survey is forwarded to Bureau of Medicine and Surgery. Written instructions for disposal are issued by the Bureau.

The *Bureau of Supplies and Accounts Manual* prescribes procedures for preparing civilian pay rolls at nonindustrial activities. These procedures should be followed with modifications to meet local conditions.

MASTER-AT-ARMS

The personnel officer, with the approval of the executive officer, assigns an enlisted member of the staff to serve as master-at-arms, with the necessary additional assistants. The master-at-arms will be a chief dental technician when practicable.

He performs duties as outlined in *Navy Regulations*, and *Manual of the Medical Department* as far as applicable to a naval dental clinic, and is guided in his duties by the following:

1. Receives reports of absentees or any irregularities occurring during the night from the mate-of-the-day coming off watch.

2. Reports to the executive officer for special orders of the day, informing him of anything of note that has occurred since 1630 of the previous day.

3. Maintains discipline and good order among dental technicians attached.

4. Prepares and submits to the personnel officer weekly a watch list, cleaning detail, and office detail list.

5. Assigns early mess passes.

6. Details and inspects the work of the civilian porters if such are employed.

7. Makes certain that all enlisted personnel are present each day and are properly performing their duties.

8. Conducts report mast on all offenders, and enforces punishment awarded.

9. Accompanies the dental officer in command on all inspections.

10. Gives necessary instructions to the mate-of-the-day as to watches and details other than those detailed.

Thus far, we have tried to show the dental command as it would appear to the patient or the casual visitor, one who would be primarily interested in the manner in which it accomplishes its logistic aim—the provision of dental services for naval personnel.

Each command must do more than execute the functions of its primary logistic goal—it must also care for the personnel who man the clinics and offices and carry out the general policies of the Navy. These extra duties demand added personnel and greater working areas.

Among the more important of the duties of a command in caring for its personnel, is the necessity, when not otherwise available, of providing living quarters and messing facilities. This demands extra building space for barracks, extra personnel to care for the added space, facilities for cooking and serving meals, storage facilities for fresh and staple foods, and added personnel needed to prepare and serve meals.

Some dental commands may not have all activities described, but may call upon other commands to provide quarters, messing facilities, or the services of a disbursing officer. In such cases, a larger percentage of the personnel attached would be assigned to strictly dental duties and fewer men would be needed for administrative purposes.

In addition to those officers and men assigned to carry out the primary logistic aim of the command and those assigned to the duties required by the demands of staff personnel, there may be other duty assignments which will stimulate morale, ensure satisfactory public relations, and protect the command from annoyance from activities outside the naval service. The size and scope of such activities in one command will vary greatly from those to be found in another, but one or more of the following activities will be found in almost every command.

Most naval commands maintain a crew's library stocked with fiction and nonfiction for general recreational and educational purposes. Most medical and dental commands also maintain a professional library stocked with current professional books and periodicals designed to aid the naval officer in his daily work and in pursuing any research problems he may have in mind. This, of course, requires space and personnel to store, care for, and issue reading material.

Another essential of a well-rounded organization is the educational department. In the smaller commands, this may require only the part-time services of one officer. In larger commands, however, this may be the full time assignment of one or more officers and several en-

listed assistants. The educational department of a dental command, as in any other activity, is to make available to staff personnel the material needed to prepare for advancement in grade or rating and to inform personnel regarding other educational opportunities as they arise.

Other offices such as legal assistance, public relations, welfare and recreation, religious facilities, Red Cross, and kindred services, while not essential to the carrying out of the strict logistic aim of any one command, have proved themselves invaluable in reducing the number of administrative complaints, in improving morale, and ensuring a more satisfactory public relations policy with the other services and with civilians.

In summary then, each dental command is much like other naval commands. It must devote space and personnel to carrying out the administrative functions of a naval activity—formulating local policy, interpreting naval policy, and blending the two into a smooth organization.

It must also provide space and personnel required to carry out the various forms of dentistry provided in its logistic goal. Some may furnish only operative dentistry, some surgical, some prosthetic, while most will provide all or most of these services.

Finally, each command must devote space and personnel to provide those services which will ensure the health, comfort, and well-being of the personnel attached to the unit.

No set percentage can be set for the number of personnel or the amount of ground or floor space which should be assigned to any one of these three groups, as this will vary greatly. The size and number of many services will depend largely upon the availability of similar services from adjacent commands.

From our discussion of the administration of a dental command, it should be apparent that the organization of a dental activity is similar to that of a medical command.

This is as it should be, since every command in the Navy, whether line or staff, is bound by the same set of regulations, differing only in function and logistic goal.

Each type of command, however, has its own little peculiarities which set it apart from other commands. A line command has a preponderance of military personnel and is set up to maintain or support a fighting organization.

A medical command is arranged to care for the sick and injured, and has charge over personnel (patients) who have been temporarily relieved of their regular duties.

Dental commands, too, have their own little peculiarities

which set them apart from other activities.

One of the first items to interest a person looking over the organization chart of a dental command is the high ratio of officer personnel. In dental commands commissioned officers may make up as much as one-third of the over-all staff. In some, the percentage may run even higher.

This high percentage results from the logistic goal of every dental activity, that of providing dental care for naval personnel and authorized supernumeraries.

In most line and staff commands, the bulk of the work is accomplished by trained enlisted personnel under the supervision and direction of a relatively small group of officers. In dental commands, however, the bulk of the dental care is provided by the dental officers, with the assistance of trained enlisted technicians.

Another peculiarity of a dental activity which sets it apart from other commands is the fact that it requires comparatively little space in order to accomplish its logistic goal.

A medical command must be large enough to house the various clinics, operating suites, and therapy divisions needed to care for the sick and injured, as well as the space needed to house and feed the staff and patient personnel attached to the unit.

A dental command, however, is more compact. A single dental office requires but little space, and several offices can be placed in a single wing of a single building without impairing the efficiency of the unit as a whole.

The dental storeroom need not be large, as compared to the storerooms of other types of commands, since most of the large pieces of equipment will be installed in the operating rooms and in the laboratory. The bulk of the space in a dental storeroom is filled with small items of expendable supplies.

Additional building space will be needed to house and feed staff personnel, but little space will be needed to care for dental patients. The vast majority of dental patients will come from other units for treatment and return to their units on completion of treatment. Very few, if any, dental patients would remain for in-patient care since such patients are, as a rule, transferred to a hospital or other medical unit having the facilities to care for in-patients. The majority of medical units providing in-patient care employ the services of at least one dental officer, who works in cooperation with the medical officers of the unit.

TYPICAL DENTAL COMMAND

Let us examine a typical dental command or dental department and see how it operates.

The first sight to greet the patient or visitor as he steps through the entrance is the waiting room and information desk.

The size of the waiting room will depend largely on the number of dental offices to be serviced and the type of dentistry being performed. It will, however, be large enough to accommodate the number of patients who would normally have appointments at any one time, and sufficient additional space to accommodate patients reporting for emergency care.

The information desk, too, will vary in size and arrangement, depending on the size of the dental facility.

In a small activity, a single desk and telephone, with one attendant to route patients and direct visitors would be sufficient. In a larger activity, however, this would be expanded to include a small office equipped with telephones, intercommunication system, filing cabinets, and all the equipment needed to contact any part of the command, to route patients and visitors, and to maintain such records as might be called for by the unit's organization bill.

Just beyond the waiting room, the operating clinics will be arranged. This arrangement may vary according to the structure of the buildings involved; but, as a general rule, each dental operating unit will be enclosed in a separate office or cubicle. These offices will occupy the office space on both sides of the passageways, in the wings of the building which radiate from the waiting room and information desk.

These dental operating rooms will be of three general types, depending on the type of dental care to be rendered, and will be equipped accordingly. The first type, designed to render general operative dentistry, will usually occupy those offices nearest the waiting room. Here patients will receive routine amalgam and cement fillings, gingival treatments, oral prophylaxes, and sundry routine treatments. The second type, designed to render oral surgery, usually occupy office spaces set apart from the general clinic. Here patients will receive any oral surgical care that may be necessary, and such post-operative treatment as may be required. The third type of dental office will be set up to care for those patients who will require prosthetic dental appliances. These offices, too, will be located in a separate part of the clinic. In addition to the regular dental operating rooms, each dental clinic will have several supporting offices.

In the larger clinics, a consultation office will usually be set up just beyond the waiting room. Here all new patients will be examined, routine examination reports prepared, and reports of diagnoses made. Regular appointments with the operating offices will usually be

made here, though methods for assigning appointments will vary from station to station.

Each clinic will have one office equipped to take intra-oral and extraoral X-rays, with a dark room equipped to develop and dry the exposed films. In some clinics this will be made part of the consultation office, though larger clinics will usually prefer to make this a separate department.

The location of the X-ray department will depend on many factors, though it should be readily accessible to both the operative and the oral surgery departments. In the larger clinics, it may be found necessary to install X-ray equipment in both departments, though a single dark room will usually suffice.

The arrangement of the oral surgery suite will also depend on many factors, the space available, amount and type of surgery performed, and the desires of the dental officer in command and his professional assistants.

The larger clinics will usually have one central office set up to care for surgical equipment. Here instruments will be cleaned, sharpened, sterilized, and set up in packs as needed. This office will usually include an autoclave and an oil sterilizer, as well as facilities for cold sterilization and boiling water sterilization. This central instrument office will also have facilities for the storage of clean instruments and sterile packs.

One or more enlisted technicians will be assigned to this room and will be charged with the responsibility for caring for all surgical instruments and appliances. Procedures for the issuing of equipment to and from this sterilization room should be set up to ensure adequate accountability, but such procedures will vary from one command to another.

The offices providing prosthetic dental care will, as a rule, be located at the farthest point from the waiting room, since they will handle a smaller number of patients than either the operative clinic or the surgical clinic. Some commands may even have the prosthetic clinic in a separate building or wing. In addition to the regular prosthetic dental operating rooms, the prosthetic department will have a prosthetic laboratory, manned by capable enlisted technicians.

Larger commands will also have additional working spaces designed to handle crown and bridge prosthesis and similar specialized procedures. These laboratories will be located in such a manner that they will be readily accessible to the prosthetic dental operating rooms, yet beyond the normal path of patients' entrance and exit.

The prosthetic department will have one office which normally has no counterpart in either the operative or surgical departments. This is the "gold desk." The "gold

desk" may have different names in various commands, but every prosthetic activity must have one section set aside to record the issuance and return of precious metals currently being used.

The officer or man in charge of the "gold desk" will be the one authorized to draw precious metals from the larger stock in the main store-room and will be responsible for the custody and accountability of all gold, platinum, and other precious metals used in the prosthetic department. Though the exact procedures for handling metals may vary from one activity to another, the procedures put into effect must be designed to record the amount of metal received from the main storeroom, the amount issued for each case, the person to whom it was issued, the amount of metal returned from each case, the amount used, and the amount lost in polishing.

This information should be compiled in such a way that it will be readily available for determining the cost and amount of metal used per case and over any given period, if called for by the Navy Department. The records kept should be of a type which will assist an auditing board to conduct a physical inventory, showing the amount of each type of metal received and the dates received, the amount of each type of metal outstanding on current cases, and the amount of each type of metal on hand in the safe.

The man in charge of the "gold desk" must not only keep a constant check on the personnel working in the prosthetic department, but must also maintain a liaison with two other departments: the storeroom, and the administrative office.

The storeroom may be located anywhere within the clinic but, as a general rule, the issuing section of this room will be located at a central point so as to be readily accessible to every service within the command. The size and physical layout of the storeroom will vary from one clinic to another, but all will be based on the same basic principles.

A small clinic may have a single room which will serve as both an issue room and as a storage room for items not in current use. Most commands, however, will divide the storeroom into sections. One section, the larger, will provide storage space for bulk items of supplies and equipment. Shelves and bins will be provided, as necessary, to ensure an orderly arrangement and convenient accessibility.

The smaller section, usually designated as the issue room, maintains a stock of supplies and smaller items of equipment which are required by the various departments of the clinic from day to day. The issue room will supply the "gold desk" of the prosthetic department with needed quantities of precious metals, the surgical department with gauze, the operative department with amalgam, the X-ray offices with film, the administrative offices with paper and pencils, and the pharmacy (if any) with the medicines needed to compound prescriptions. In other words, each department will draw needed supplies and equipment from the issue room, employing the procedures and forms required by clinic regulations. The issue room, in turn, will replenish its stock from the main storage room.

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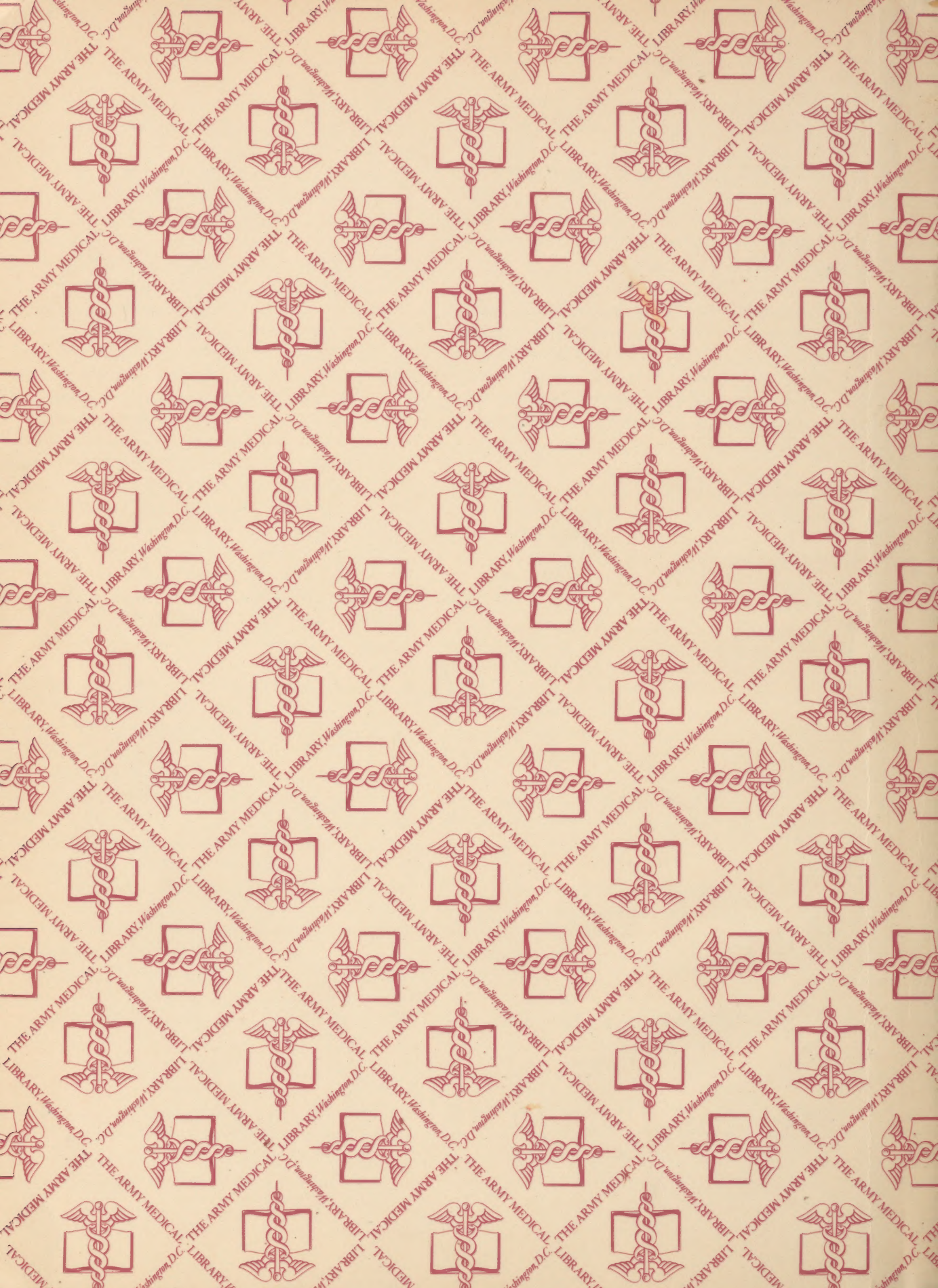
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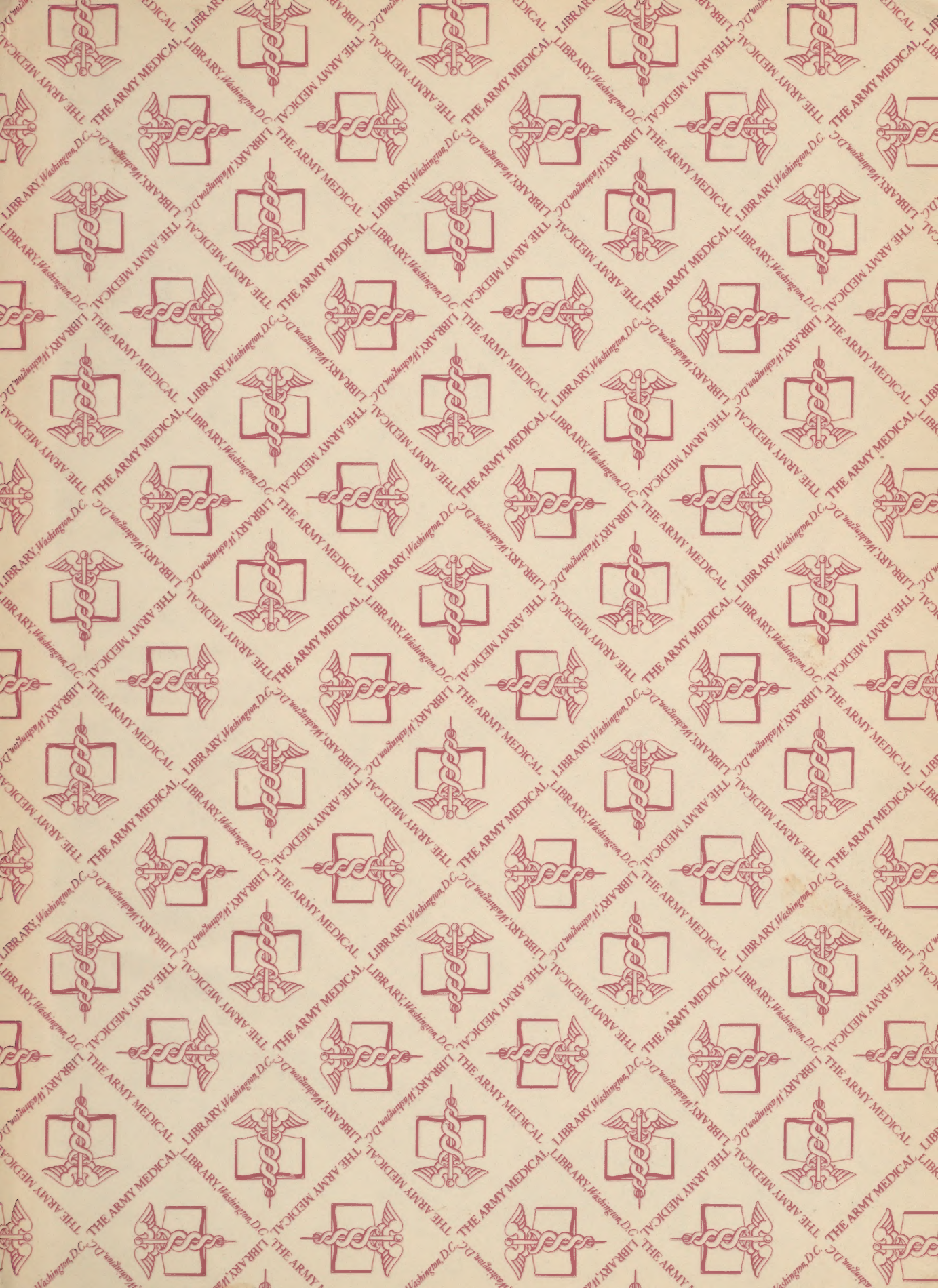
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